The Resources and Trade Prospects of Northern Ontario

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The Resources and Trade Prospects of Northern Ontario

A Special Report made on Behalf of The Toronto Board of Trade

By **FRED. W. FIELD.**

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PREFATORY NOTE.

In presenting an idea, in the following pages, of the natural resources of Northern Ontario and of the trade prospects of that country, it has been thought well to quote certain statistics relating to Canada as a whole and others showing Old Ontario's contribution. In this way it is possible to judge what Ontario has accomplished with only the lower portion of the province developed and cultivated. On that basis, and in view of the great natural wealth of the Northland, one is able to realize to some extent the great agricultural and industrial possibilities which exist there and the consequent opportunities for trade.

Emphasis has been placed upon the necessity for the settlement of the land for agricultural purposes. This has been done without wishing to minimize the immense importance to Canada of the mining industry. The point which it is desired to make is that to a large degree the business of towns depending for their existence on mining camps must necessarily be to some extent of a temporary nature. On the other hand, those communities backed by extensive agricultural areas, well settled and well tilled, possess a permanent basis.

Acknowledgments of information and statistics are due to the Temiskaming and Northern Ontario Railway Commissioners and officials, the Provincial and Dominion Ministers, their deputies and assistants, the Toronto and the Northern Ontario Boards of Trade, Mr. R. Home Smith, Mr. R. S. Gourlay, and many others. Their help has been of considerable value in compiling the following pages.

On account of unavoidable delay in publication, certain figures in this report have been superseded. The later statistics are therefore included as Appendix XI.

FRED. W. FIELD.

TORONTO, December, 1911.

I.

MINERAL PRODUCTION.

To some extent, the discussion of trade prospects and possibilities in a new country, which has known the railroad for only a few years, has the appearance of extreme prophecy. Such is the case in Northern Ontario, but imagination can be reduced to something more substantial by examining the extent of natural resources, the amount of development work accomplished, the probable trend of future development, and the work on the part of the provincial government, boards of trade, municipalities and the individual which appears to stand prominent.

The settlement of the Dominion has been undertaken largely in sections. Old Ontario is enjoying prosperity based upon the work of early pioneers and upon the later growth of Manitoba, Saskatchewan and Alberta, which, together with British Columbia, have enjoyed for the past few years the largest benefits of new capital and population. The Pacific Coast province is entering upon a new era as the result of considerable railroad construction, accomplished and proposed. The Maritime Provinces, for a similar reason, will probably within the next decade experience much business expansion.

Will Absorb Capital and Immigration.

It is not so long since positive critics asserted that wheat would never be grown on the Western prairies, which are now producing over 194,000,000 bushels. The opening of Western lands to settlement drew away from Old Ontario a large portion of its population. The good results achieved and continued prosperity there are still causing loss to Ontario of its settlers. To-day a long existing but neglected factor, Northern Ontario, is being recognized. During the next few years it will, if fostered, play an important part in Canadian development. With proper exploitation, this great Northland, pregnant with possibilities, will absorb capital and immigration, two effective nation builders.

To mining in the North we owe a great deal. Not only has that industry produced many million dollars worth of ore, but it has also given the Temiskaming and Northern Ontario Railway, the government road, a strong revenue foundation upon which agricultural settlement may be more easily assisted. In addition, it has been an excellent advertisement for Northern Ontario.

It has attracted attention which might have been centred elsewhere had there not lived a Cobalt and a Porcupine. Ontario is contributing a large proportion to the total mineral production of Canada, as the following figures, computed on the Ottawa Dept. of Mines basis, show:

Year.	Ontario.	Canada.	Ontario's Percentage Share.
1909.........	$37,352,124	$ 91,831,441	41.00
1910.........	42,693,729	105,040,958	41.00

THIRTEEN PER CENT. OF WORLD'S PRODUCTION.

The year 1910 was a remarkable one for the silver mining industry of the North. The Cobalt silver district is contributing not only the greatest part of Ontario's, but also of Canada's silver production, as is clearly seen in the following figures:—

Year.	World's Silver Production Fine Ounces.	Canada's Silver Production.	Cobalt's Silver Production.
1909.......	201,215,633	27,878,590	25,903,985
1910.......	217,788,714	32,878,590	30,645,181

The production of silver in Cobalt in 1910 was 30,645,181 ounces. Canada's proportion of the world's production for the year is 15.1 per cent., and places the Dominion third in the list of silver-producing countries. Figures for the year 1910 illustrate this point:—

Country.	Value of Silver Production.
Mexico............................	$72,574,220
United States......................	56,438,695
Canada............................	32,878,590
South America.....................	16,476,928

If we were to take the value of silver production in 1910 in Cobalt alone, $15,478,047, Canada, even then, would be removed only to fifth place in the list, the Cobalt production being slightly less than the entire South American output, valued at $16,476,928.

INCREASE IN SILVER PRODUCTION.

The steady growth in the production of the Cobalt mines is seen in the following figures compiled from the twentieth annual report of the Ontario Bureau of Mines:—

Year.	Number of Producing Mines.	Shipments, Ore, and Concentrates, Tons.	Value of Shipments Ore, Concentrates and Bullion,
1904...........	4	158	$ 111,887
1905...........	16	2,144	1,360,503
1906...........	17	5,335	3,667,551
1907...........	28	14,788	6,155,391
1908..	30	25,624	9,133,378
1909.......... .	31	27,729	12,461,576
1910...........	41	34,282	15,478,047

The figures for 1910 include Gowganda and South Lorraine.

The effect of this extraordinary mineral production on general trade, dealt with in a later chapter, can well be imagined. The wages received by 3,318 employees in the Ontario silver mines and refineries in 1910 totalled $2,973,772, almost, if not entirely all of which was spent in the province. In 1910, the number of employees engaged in the mines and mineral works of Ontario was 16,688, and the wages paid to them totalled $10,532,257.

HEAVY DIVIDENDS PAID.

The actual mine operations have proved remunerative, if we may judge by the dividends paid. Of the total production at Cobalt from 1904 to 1910 inclusive, valued at $49,180,525, nearly fifty per cent. of that amount has been repaid to shareholders in dividends. Fortunately, the silver market has remained comparatively steady during the past two years and 1910 showed increased strength over 1909, the average price being 53.486, as against 51.502 cents per fine ounce at New York quotations. This is an important factor in Northern Ontario's mineral production. The rise in price last year meant an increase in the yearly earnings of Cobalt of more than $860,000. Mr. Arthur A. Cole, the well-known mining engineer of the Government railway, estimates that for every one cent in rise of the price of silver, Cobalt's earnings benefit by about $300,000.

DEMAND FOR SILVER.

As in former years, most of the demand for silver came from the East. Early in the year China was a heavy buyer, but India proved the steady consumer. Judging from the fact that stocks have been well absorbed, it is probable that the present prices will rule or improve for some time to come. The ore and concentrates from Cobalt have been shipped to various parts of Canada, the United States, Great Britain and Germany. The proportion of shipments in 1910, in the order named, was 29.20, 68.96, 1.15 and 0.69 per cent.

Twelve concentration plants and three customs mills are operating in the Cobalt district and several others are contemplated. Their aggregate daily capacity is 1,225 tons.

HOW MINING HELPED THE RAILROAD.

The increase in freight carried by the Temiskaming and Northern Ontario Railway since the commencement of its operation in 1905 is due to a large extent to ore from the Cobalt camp, as the following table of ore shipments shows:

Year.	Tonnage.
1905	2,336.01
1906	5,836.59
1907	14,851.34
1908	25,362.10
1909	29,942.99
1910	33,976.97
	112,306.00

ROYAL MINT TOOK ONTARIO MINERALS.

The Ottawa branch of the Royal Mint has taken a certain amount of gold and silver bullion mined in Ontario. The following table shows the receipts at the Mint during the calendar years 1908, 1909 and 1910:

District.	1908		1909		1910	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
Algoma	......	....	......	......	194.003	221.73
Flinton	......	....	63.932	26.43	9.369	5.58
Gold Rock	......	....	1113.600	321.90	......	......
Larder Lake	44.847	9.18	68.001	13.96	12.502	3.04
Michipicoten River	......	....	19.696	4.61	150.571	71.86
Rainy River	......	....	9.417	2.16	185.855	30.87
Swastika	......	....	......	......	13.518	6.12

This is a total of 1,885.311 fine ounces of gold and 717.44 fine ounces of silver. In addition, 75,000 fine ounces in silver bullion were purchased in 1909 from the Deloro Mining and Reduction Co., Deloro, Ontario.

WHAT THE MINES GAVE.

The total mineral production of Ontario in 1910, according to the report of the Bureau of Mines was valued at $39,313,895. The following table gives an idea of Ontario's importance in general mineral production, the figures showing the value of the output in 1910 compared with that of the previous year.

PRODUCT.	1909.	1910.	INCREASE.
Metallic:			
Gold	$ 32,445	$ 68,498	$ 36,053
Silver	12,464,722	15,481,322	3,016,600
Cobalt	94,965	54,699	*40,266
Nickel	2,790,798	4,005,961	1,215,163
Copper	1,127,015	1,374,103	247,088
Iron Ore	645,622	513,721	*131,901
Pig Iron	6,301,528	6,975,418	673,890
Zinc Ore	8,950	5,760	*3,190

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* Decrease.

PRODUCT.	1909.	1910.	INCREASE.
Non-Metallic:			
Actinolite	....	320	320
Arsenic	61,039	70,709	9,670
Brick, common	1,916,147	2,374,287	458,140
Brick, pressed	490,571	458,596	*31,975
Brick, paving	73,700	70,648	*3,052
Building and crushed stone	660,000	761,126	101,126
Calcium carbide	151,676	184,323	32,647
Cement, Portland	2,897,348	3,144,343	246,995
Corundum	140,817	171,994	31,177
Feldspar	36,204	47,518	11,314
Fluorspar	....	15	15
Graphite	37,624	55,637	18,013
Gypsum	23,604	17,825	*5,779
Iron pyrites	78,170	98,353	20,183
Lime	470,858	474,531	3,673
Mica	73,124	85,294	12,170
Natural gas	1,188,179	1,491,239	303,060
Peat	240	1,284	1,044
Phosphate of lime	1,904	....	*1,904
Petroleum	559,478	368,153	*191,325
Pottery	43,214	51,485	8,271
Quartz	75,329	87,424	12,095
Salt	389,573	414,978	25,405
Sewer pipe	311,830	357,087	45,257
Talc	8,700	46,592	37,892
Tile, drain	363,550	318,456	*45,094

PROSPECTS ARE GOOD.

While the Cobalt district has overshadowed all other mining camps in the North, several others, notably Porcupine, have bright prospects. There is always a chance, too, that new mineral discoveries of value will be made. Mr. A. A. Cole has furnished the latest information respecting these new mineral regions. The country adjoining Elk Lake, on the Montreal River, he says, was quiet during 1910 and 1911. Work is being pushed on some of the best of the prospects with the intention of proving the properties. Two shipments, aggregating 20 tons of ore, were made in 1910.

Development is progressing surely in the Gowganda district and there are several names on the shipment list. In 1910 735 tons were shipped from this camp. Shipments during 1910 from the South Lorraine district totalled 309 tons. Many prospects in this part of the country have been waiting for the introduction of electrical power

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* Decrease.

before continuing development. The big rush to the Porcupine gold district and the satisfactory discoveries made there have justified the construction of a branch line of the Temiskaming and Northern Ontario Railway into that camp. This branch was completed and opened in July.

POSSIBILITIES OF LOCAL SMELTERS.

The ideal mining region is that in which the maximum amount of industry is created by the mineral itself and retained in the district. Of the twelve smelting companies receiving or bidding for Cobalt ores at the end of last year, six were Canadian, four American, one British and one German, with a New York agency. Trade naturally is given impetus by the establishment of additional plants. The question of a special effort to retain for Northern Ontario the smelting of its ores deserves the serious consideration of mine managers, the Government and its railway commissioners, the smelting companies and capitalists generally.

TONNAGE TREATED IN CANADA.

In 1910, as in former years, the tonnage treated in Canada was less than that shipped to the United States for treatment. The Canadian smelters, however, treated ore of a higher grade, with the result that they accounted for a little more than 50 per cent. of the total tonnage. In 1910 the three Canadian companies which have their plants at Copper Cliff, St. Catharines and Deloro treated 16,700,000 ounces. Three new smelting companies, with works at Orillia, Toronto and Swansea, are now entering the market for the purchase of ore from the Cobalt camp.

Smelters operated in Ontario should be able to compete well with foreign companies. The freight charges on ore shipped from Cobalt to Hamburg, Germany, for instance, were $13.47 per ton shipped *via* Montreal during the summer and $15.20 per ton *via* Boston in winter. This compares with a rate from Cobalt to Copper Cliff, for example, of $5.20 per ton, assuming that the value of the ore is above $49 and under $100 per ton. The establishment of smelters near the mines would have had an initial advantage in freight rates. Some figures in respect to this phase are given in Appendix I.

MINING CAMPS AND TRANSPORTATION.

The country is indebted to the mining industry for much of the new impetus given in recent years to business in New and Old Ontario. This should not be lost sight of in the cloud of those mining company promotions which are formed to magnetize small savings and have not the legitimate mining industry in view. Having benefited from this sphere of development, we are confronted with a question of railroad policy—that is how far the Government road, primarily for colonization, should cater to the needs of comparatively new and undeveloped mining districts. At the time of writing Elk Lake and Gowganda feel the need of better railroad facilities. On the other hand, the Government railway commissioners apparently do not think that an extension of their road into that region is yet justified. It is a difficult situation and there are two distinct view points. Branch lines to mining regions are probably built only on the assumption that the camp will have a sufficiently long life and the aggregate freight will be bulky enough to pay the expenses. It will be well to quote a letter received from an Elk Lake resident detailing the claims of that country to the railroad.

What Might Have Been.

"The Montreal River silver mining country comprises the two mining districts of Montreal River and Gowganda, and extends from a line drawn west from Latchford to the south boundary of Porcupine Mining division and west to the east boundary of Sudbury district. Elk Lake is the chief centre of population, Gowganda being the only other village as yet, although there will be another somewhere about Wigwam on the Gowganda road. Elk Lake has a population of about one thousand at present, and the number has varied from eight to twelve hundred during the past two years. Had Cobalt never been discovered, the Montreal River country would now have been a prosperous silver mining camp. The finding of several rich silver properties at Cobalt, which paid early dividends, caused the growth on the Montreal River of a large number of undesirable companies with a large amount of capital stock little of which was paid up, and with a hope that similar conditions to those of Cobalt would prevail. Many of the so-called mining experts, who exploited the properties, spent more on luxuries and expensive frills than they did on mining. At present, there is not one property in the Elk Lake district developed sufficiently to say whether or not it is a potential mine. Gowganda is somewhat more fortunate in having a couple of properties that have the ore in a more convenient position and these have already become permanent shipping mines. The others are in the same position as those in Elk Lake, they are good prospects, but not enough work has been done yet to assure permanency."

For and Against.

My correspondent then details the unhappy experience of certain mining companies, several of which failed, owing large sums to the local merchants. More than a year ago, he states, private capital offered to build a railroad into Elk Lake and Gowganda, but it was not given the opportunity. The fact that a private road would be to some extent under the control of the Government road, of which it would in reality be a branch, is another adverse factor, thinks the correspondent, who gives as the natural solution of the difficulty the extension of the Temiskaming and Northern Ontario Railroad itself.

"The Government engineers say," he continues "and with considerable truth, that the present development does not justify the building of an expensive steam road, and until the mines have developed more and have an assured permanency, there is no surety that such railroad might not be a failure. In reply, the miners contend that the Government has a right to take some risk, when the miners and pioneers have undertaken considerable risk in many cases. They also point out that there was ten times the risk when the Government railway itself was first built, and but for the fortunate accident of the discovery of silver, that road would not now be paying for the grease on the wheels. They also say the building of the branch into Porcupine was taking a greater risk than the building of a similar road into Elk Lake and Gowganda."

What the Government Says.

"The arguments of the Government in favor of the Porcupine branch as against the Gowganda branch are two. The first is that Gowganda is in the forest reserve and the building of a railroad creates a danger of burning timber, while Porcupine is out of the forest reserve. The second is that in the event of the failure of Porcupine from a mining standpoint, the road there will open up considerable farm land, which will be a permanent source of revenue. In reply to the first of these two arguments, the miners say that already the Temiskaming & Northern Ontario and the Canadian Northern Railways run through the forest reserve in localities where the timber is more valuable than between Elk Lake and Gowganda, where little merchantable timber, other than pulpwood, is situated and that the pulpwood is privately owned, the owner having already stated that he is in favor of the road, and, given a reasonable rate, will use it to haul his pulpwood to Ottawa.

"In reply to the farm land argument, the officers of the mining association say that the Gowganda branch will open more and better land than the Porcupine branch, and offer to leave the decision in regard to this to a committee of three New Ontario farmers, the party in the wrong to pay the expenses of the committee. The land from Elk Lake to the railway is hard to beat in Ontario. As an example, less than two acres at one of the lumber camps yielded last season 532 bags of potatoes, which is a good yield considering the number of stumps in a newly cleared field.

Extend the Electric Road.

"The present solution of the difficulty seems to be an electric road built by the Government in connection with the recently acquired Nipissing Central. By continuing this line from Haileybury to New Liskeard and then running through the rich agricultural country to the Montreal River at Mountain Chute there would be little grading to do, the country being level and densely covered with pulpwood, which would yield a revenue for years to come and leave cleared farms in its wake. Crossing the Montreal River at Mountain Chute, the road would have a level right-of-way to the Government townsite of Smyth at Elk Lake and from there to Gowganda could follow along the side of the Government waggon road. A short waggon road into Maple Mountain from Mountain Lake would serve that section and the electric road would touch nearly every important mining centre in the Montreal River country or go near enough to allow a short haul for ore taken out and coal brought in. The cost of such a road need not be more than about $8,000 per mile. The interest charges and operating expenses would be small. At Indian Chute and Mountain Chute, on the Montreal River, about ten or twelve thousand horse power could be developed which would supply the Nipissing Central with power and leave some for sale to the mines. This seems a rational scheme and should receive the unanimous support of the people of Ontario, a vast number of whom are interested in Montreal River properties."

In considering these arguments, it must be borne in mind also that the Temiskaming and Northern Ontario Railroad was built firstly for colonization purposes. Agricultural development, therefore, has first claim upon the railroad even if it be operated for that reason at a small profit. It cannot be expected that a railway will take the same risks as do mining men. On the other hand, the claims of small mining towns deserve the most serious consideration from transportation interests.

The Temiskaming and Northern Ontario Railway Commission estimate that the total tonnage to and from Elk Lake and Gowganda, to December 31st, 1910, was as follows:

Point	Tons
To Gowganda	3,777
From Gowganda	420
TOTAL	4,197

Point	Tons
To Elk Lake	15,822
From Elk Lake	571
TOTAL	16,393

BUSINESS PROPOSALS MADE.

The most definite proposal as yet made by Mr. Englehart, Chairman of the Temiskaming and Northern Ontario Railway Commission was to New York capitalists, who are largely interested in mining properties in the Gowganda region. It was suggested that they should furnish the funds and that the Commission should build a road for them, turning over 65 per cent. of the gross receipts for passenger and freight traffic, telegraph and telephone service and allowing them 4½ per cent. interest on their investment.

A similar undertaking has been accomplished by the extension of the Procupine branch of the Government road into the Pearl Lake district. The decision of the Commission, it is said, was obtained only after the Timmins-McMartin syndicate agreed to finance the operations. It is understood that the arrangement provides for a loan of the amount required, between $100,000 and $150,000, upon which the syndicate will receive interest at the rate of 5 per cent., and presumably repayment when the earnings of the extension warrant it

Some general information for mining prospectors is given in Appendix II.

II.

FOREST WEALTH AND PRODUCTS.

The Temiskaming and Northern Ontario Railway runs through two distinct countries. From North Bay to North Cobalt is chiefly a rocky country where minerals pay dividends. Therefrom to the terminus of the Government railroad at Cochrane is excellent farming land, which, in its natural state, is heavily laden with good timber. Even in the mining districts the soil has been cultivated to a small extent. The sight of a thriving potato patch within a few feet of a well-known silver mine at Cobalt brings to mind the picturesque window box of flowers in the city slum—it looks out of place, but is welcome, useful, and illustrates possibilities. The potato patch at Cobalt is an index of what can be accomplished on the land farther north, where, so far as we know, minerals do not tempt the farmer from his avocation, and where the soil has growing qualities equal to those to be found anywhere in the Dominion.

TIMBER IS AN ASSET.

Before the plow turns the furrow there is a blanket of valuable timber to be removed. Rather than being a drawback, as some are stated to think, this timber is an industrial asset, and at the same time provides the settler with building materials and firewood. A forestry expert in the employ of the Dominion Government makes the following unofficial estimate of the Dominion's timber resources:—

Province.	Total Acreage.	Publicly Owned.
British Columbia	50,000,000	49,200,000
Manitoba, Alberta, Saskatchewan, and Territories	100,000,000	94,000,000
Ontario	70,000,000	52,400,000
Quebec	100,000,000	43,800,000
New Brunswick	12,000,000	2,400,000
Nova Scotia	4,000,000	None
Prince Edward Island	100,000	None
TOTAL	336,100,000	241,800,000

After Quebec, Ontario thus has the greatest acreage of timber resources. Less than 50 per cent. of Quebec's acreage is publicly owned, while more than 75 per cent. of Ontario's total acreage is so owned. Ontario's acreage is twenty millions in excess of British Columbia's, and is more than four times that of New Brunswick, Nova Scotia and Prince Edward Island combined.

LARGE FOREST RESERVES.

Pine is recognized as one of the most valuable timber assets, and wherever large bodies of pine have been found in Ontario the territory has been withdrawn from settlement. No less than 20,004 square miles, or 12,802,773 acres, have been created as forest reserves by the Ontario Government. They may be tabulated as follows:—

Forest Reserve.	Containing Square Miles.
Temagami	5,900
Mississagi	3,000
Nipigon	7,300
Eastern	100
Quetico	1,560
Sibley	70
Algonquin National Park	2,066
Rondeau Park	8
TOTAL	20,004

About 9,000,000 feet of pine, worth approximately $90,000,000, stand upon these reserves. No timber is sold in these except where it is damaged by fire. In the Temagami Reserve there is, however, the Booth pulpwood concession, which covers spruce and jack pine, and in Algonquin Park part of the territory is under license for all kinds of timber and part for pine only. There is also an area of about 20,000 miles of timber land subject to license. This area is approximately equal to that of the forest reserves. The system of issuing permits has been terminated. In order that those engaged in lumbering who had invested in large plants and mills should not have their investments injured, it was necessary to allow them to acquire timber at public sales in the ordinary way. The only permits now existing are on the Transcontinental Railway, where the contractors are permitted to cut ties.

AS TO THE FUTURE.

The forest products of Northern Ontario should create new industrial life in that country, giving employment to many thousands and producing a large revenue for circulation in the province. The Provincial Government has provided that all pine sawlogs, spruce pulpwood, and hemlock, must be manufactured in the Dominion, into lumber, pulp or paper. The effect of this decree should naturally increase the demand for labor, creating a market for many supplies. Canadian industrial development has been marked during the past decade, but it is doubtful whether any single industry has experienced such rapid progress as pulp and paper manufacturing. While the tariff has helped, Canada's natural advantages have figured most. These are:--

1. Large areas of forest, producing timbers best adapted to wood pulp.
2. More water powers than any other country in the world.
3. A population unusually well skilled in wood craft.

SOME WARNINGS AND SUGGESTIONS.

That there are two things that can prevent Canada from becoming in time the greatest paper manufacturing country in the world is the opinion of Mr. E. B. Biggar, of Toronto, an authority on this subject. He says:—

> "One of these is the maladministration of our great forest reserves leading to their devastation by forest fires, and the other is the needless alienation of timber tracts into private hands whether for the export of raw timber or the ruthless stripping of wood lands over the large areas of other countries in the world. While it is true that Canada has enormous areas of forest, the proportion of these areas that are clothed with commercially valuable timber in much less than hitherto supposed. When the available timber is stripped from the more accessible districts of Canada, the pulp industry will be taxed with the increased cost of reaching the remote regions. Those who administer the public domain must therefore remember that however large the apparent supply of wood, we have none to waste."

ONTARIO'S LUMBER CUT.

It will be interesting to see what Ontario is doing at present with its forest products. The official figures refer to the lumber cut in 1909, and are contained in a Dominion Forestry Branch Bulletin compiled by Mr. H. R. MacMillan, B.S.A., M.F. Later figures appear in Appendix XI. The following table shows that Ontario is still the first province in point of lumber production:—

Province.	No. of Mills Reporting.	Value of Lumber.	Percentage of Cut.
Ontario	976	$30,050,344	39.8
British Columbia	172	11,374,989	20.7
Quebec	451	9,489,386	16.7
New Brunswick	105	5,336,974	10.3
Nova Scotia	240	3,273,177	7.2
Saskatchewan	23	1,448,079	2.3
Manitoba	52	1,025,268	1.6
Alberta	40	798,320	1.4
Prince Edward Island	26	22,940	*
Canada	2,085	$62,819,477	100

* Less than one-tenth of 1 per cent.

Lumber	Canada	Ontario		Quebec		New Brunswick		Nova Scotia		Prince Ed. Island		Manitoba		Saskatchewan		Alberta		British Columbia	
	Value, 1909	Per cent. of Cut	Value $	Per cent. of Cut	Value $	Per cent. of Cut	Value $	Per cent. of Cut	Value $	Per cent. of Cut	Value $	Per cent. of Cut	Value $	Per cent of Cut	Value $	Per cent of Cut	Value $	Per cent of Cut	Value $
Spruce	$16,365,720	8.8	1,589,157	31.7	5,092,752	23.7	4,115,0	15 0	2,028,884	1.	14,756	4.8	755,033	7 8	1,439,511	3.7	671,939	23 7	4,115,0
White Pine	22,563,447	84.8	19,823,696	6.0	1,362,615	2.9		3.4	500,730		1,125							2 9	439,882
Hemlock	3,577,372	53.6	1,977,114	18.2	639,062	4.9	151,043	15 7	496,569	.1	1,995		250					7.5	311,339
Cedar	2,645,379	7.6	220,008	9.3	227,703	8.7	204,309				400		75					74.4	1,992,884
Red Pine	2,777,734	92.5	2,607,476	5.1	121,178	0.5	7,400	1.9	41,780										
Balsam	1,170,840	15.5	217,914	76.6	885,841	6.0	51,310	1.7	15,075	0 2	700								
Tamarack	1,027,344	17.9	183,444	11.2	104,419		52		248			5 3	51,047	0 1	668			65 5	687,466
Birch	990,393	36.4	419,784	23.5	200,511	30 2	308,335	9.7	59,428	.2	1,990		95		250				
Maple	729,162	83.5	626,801	7.2	57,016	2.6	11,167	6.6	33,508	.1	670								
Basswood	836,602	[illegible]	564,073	30.2	272,529														
Elm	592,999	95.5	559,483	4.5	33,516														
Jack Pine	404,596	47.1	227,6[illegible]	5.0	26,544	1.4	4,500	5.6	15,775				148	0.7	7,650	17.6	41,547	22 6	80,744
Ash	315,367	51.	175,165	48.8	139,457		168		527		50								
Beech	216,052	54.7	131,651	8.4	22,379	10.	14,766	26.4	46,323	0.5	933								
Poplar	101,200	41.8	41,568	26.3	28,938	0.7	482	6.5	6,146	0.3	321	18.9	18,980			5 5	4,765		
Oak	199,205	79.5	162,706	7.4	19,313			13.1	17,136				50						
Hickory	22,100	97.6	21,780	2.4	320														
Walnut	2,440	94.1	2,395	5.9	65														
	$54,537,952		29,551,903		9,234,158		5,303,986		3,262,129		22,940		825,678		1,448,079		718,251		7,627,370

CUTS EVERY CANADIAN WOOD.

The large annual cut of white pine in Ontario and its diversified forests, which give it a small annual cut of almost every wood produced in Canada, places that province first in the list. Ontario has been the greatest lumber producer in Canada for many years. In 1909 it produced more than one-third of the lumber cut of the Dominion. Its increase over the 1908 cut was 17.3 per cent., or a greater increase per cent. than that for the whole of Canada. It was estimated that the pine output for the winter 1910-1911 would be increased by about 50,000,000 feet board measure. Quebec's proportion of the cut would have been smaller had it not been for a large increase in the balsam cut of that province.

The total lumber cut in Canada for 1909 was little less than one-ninth of the lumber cut of the United States for 1908. The per capita lumber production for Canada for 1909 was 468 board feet, or 27 per cent. greater than the per capita lumber production of the United States for 1908. The table on page 17 is compiled from Mr. McMillan's figures, showing the value of lumber cuts in the different provinces and the percentage cut by each province.

ONTARIO IS FIRST.

Yellow pine and Douglas fir have been omitted from the above figures. British Columbia is responsible for practically the entire output in both cases. Aside from these, the total value of the Canadian lumber cut in 1909 was $54,537,952, of which Ontario's share was $29,551,903. Quebec comes second with a production of $9,234,158, a value $20,000,000 less than that of Ontario.

Quebec has been and may remain for some years the chief spruce-producing province. Nearly one-third of the total spruce cut was in Quebec in 1909. There was an increase in the Ontario cut over 1908 of 35,704,000 feet, or 56.8 per cent. The rapid gain in Ontario may, in comparatively few years, challenge Quebec's supremacy in spruce production. In white pine Ontario almost monopolizes the cut, being responsible for 84.8 per cent ot the total in 1909 as compared with 80.1 per cent. in 1908. This was an increase of 16.3 per cent. or 124,445,000 feet.

ACCOUNTED FOR HALF THE HEMLOCK.

Over one-half the Canadian hemlock is cut in Ontario. The increase in the total Canadian cut of 1909 over 1908 was largely accounted for by Ontario, while in 1909 the cut exceeded that of the previous year by 27,144,000 feet, or 20 per cent. In point of quantity, hemlock is exceeded only by white pine in Ontario's lumber production. Ontario produces only a small proportion of cedar, although in 1909 the output showed an increase of 1,777,000 feet, or 14.2 per cent Red pine is confined to Eastern Canada. Ontario again takes premier place, having produced in 1909 more than nine-tenths of the entire Canadian cut of red pine.

An extraordinary increase was made in the Ontario cut over 1908, the gain being 53,336,000 feet, or 53 per cent. At the same time this wood was most expensive in Ontario, where it was quoted at $17.03. The increasing scarcity of other woods in Eastern Canada is attracting greater attention to balsam, three-quarters of the cut of which is produced in Quebec. There was an increase of about 2,000,000 feet in the cut for 1909 in Ontario, which produced 17.9 per cent of the total cut.

LARGE INCREASE IN MAPLE CUT.

Ontario produced 17.9 per cent. of Canada's tamarack, British Columbia leading in the output of this wood. Over one-third the birch cut in Canada is produced in Ontario, where there was a slight decrease in the cut in 1909. Of maple, this province accounted for 83.5 per cent. of Canada's cut. The increase in cut was 40.4 per cent., or 12,388,000 feet, in 1909, but despite this large increase maple remains tenth in the list of Canadian woods and second in the list of hard woods. The largest increase in the maple cut was in Ontario, where five-sixths of Canadian maple is produced. The actual gain for 1909 over the previous year was 12,304,000, or 51.9 per cent.

Only two provinces, Ontario and Quebec, yielded basswood, Ontario producing about two-thirds of the total and the remainder coming from Quebec. The same two provinces are cutting the Canadian elm output, no less than 95.5 per cent. being produced in Ontario. In jack pine Ontario again figures as premier producer, nearly half of the Canadian cut being accounted for by that province. Jack pine is used largely for railway ties. Practically all the ash comes from Ontario and Quebec, a little over one-half being cut in Ontario.

SCARCITY OF HARDWOODS.

The scarcity of other more valuable hardwoods is leading to an increased use of beech, of which Ontario again accounts for more than half manufactured in Canada. Poplar is widely distributed in large quantities throughout the Northern timber belt, Ontario once more leading in production. That province, together with Quebec, produces about two-thirds of the Canadian poplar cut. More than three-quarters of the Canadian oak is produced in Ontario. Hickory for commercial purposes is nearly extinct in the Dominion, and is now confined to stray trees in farmers' wood lots. Of the small cut, Ontario accounted for 97.6 per cent. The cut of walnut was also meagre, Ontario producing nearly all.

A NOTABLE RECORD.

Despite the fact that its vast Northern timber lands are practically unexploited, Ontario leads in the cut of 14 species of lumber, as the following table shows:

Lumber.	Ontario's Percentage Share.
White pine	84.8
Hemlock	53.6
Red pine	92.5
Birch	36.4
Maple	83.5
Basswood	69.8
Elm	95.5
Jack pine	47.1
Ash	51.
Beech	54.7
Poplar	41.8
Oak	79.5
Hickory	97.6
Walnut	94.1

III.

FOREST WEALTH AND INDUSTRIAL POSSIBILITIES.

Ontario having the lead in lumber cut and possessing valuable timber lands, there is the foundation of important industrial development in its North. The values given for lumber quoted in the above tables, are the values at the mill. The average price of lumber in the several provinces in 1909 was as follows:

Province.	Average price per thousand feet.
Nova Scotia	$11.96
Prince Edward Island	12.24
New Brunswick	13.64
Quebec	14.86
Alberta	15.11
British Columbia	16.31
Saskatchewan	16.58
Manitoba	17.12
Ontario	19.80

The average price obtained in Ontario was $2.68 higher than in Manitoba, where the next best figure was obtained. The comparatively high average value in Ontario is due partly to the large cut of white pine and to the fact that a higher price is charged in Ontario for nearly every species of lumber than is secured in the other provinces. This is an important consideration for capital proposing to become interested in this industry in Ontario.

In relation to sales of Canadian lumber in the United States, the following figures give the average price of various species in that country in 1908 compared with the average price in the Dominion:

YEAR 1908—PER THOUSAND.

Lumber.	Average price, United States.	Average price Canada.
Spruce	$16.25	$14.55
Pine	18.17	20.08
Hemlock	13.65	12.44
Cedar	18.03	15.69
Balsam	14.36	12.53

Lumber.	Average price, United States.	Average price, Canada.
Tamarack (Western)	11.81	13.50
Tamarack (Eastern)	12.86	14.15
Birch	16.42	16.86
Maple	16.30	16.99
Elm	18.40	17.92
Ash	25.51	19.00
Beech	16.27	14.53
Oak	21.23	29.97
Walnut	42.53	47.84

In the United States Govenment reports, red and jack pine are classified with white pine and comparisons cannot be given. Red pine in 1909 sold in Ontario at $17.03 compared with $9.96 in New Brunswick. The average price of basswood for 1908 was $1.24 higher in the United States than in Canada.

ONTARIO'S SHARE IS LARGE.

There is an increase of 150,562,000 pieces or 22.4 per cent. in the manufacture in Canada of lath for 1909. One-third of the lath manufactured in Canada comes from Ontario, where the majority cut are white pine. The average price was $2.46 per thousand, an increase of 25 cents over 1908. Ontario is fifth in the production of shingles, valued for the whole of Canada at $3,701,182.

The only figures available as to the amount of square timber cut annually are the export statistics furnished by the Department of Trade and Commerce. There is little hewn square timber used in Canada and as all the sawn square timber is entered under the head of lumber, the quantity of hewn square timber exported is approximately the quantity cut. The following table gives the quantities of square timber exported during the calendar year 1910:

Wood.	Quantity Exported in 1910. Tons.	Total Value.
Ash	380	$ 5,689
Birch	11,324	134,358
Elm	2,097	48,953
Maple	23	182
Oak	653	16,878
Pine, red	4,400	134,412
Pine, white	18,020	562,258
All other	2,670	31,993
	39,567	$934,723

White pine is by measurement the chief square timber exported. In 1909 it represented 60.7 per cent. of the total. Birch is second. Ontario leads in the production of both these timbers.

VALUE OF HARDWOOD IMPORTS.

In the same year the hardwoods cut in Canada totalled 220,450 M. feet board measure, while 103,705 M. board measure were imported. Commenting on this fact, Mr. H. R. MacMillan of the forestry branch of the Department of the Interior says:

> "Nearly all these imports are from the United States. Canada is dependent upon the United States for the greater part of her supplies of such valuable hardwoods as oak, hickory, white wood (tulip or yellow poplar), chestnut, gum, walnut, cherry and for all the hard pine which is so frequently used as a substitute for hardwoods. The value of the hardwoods imported into Canada during 1909 exceeded by 29.8 per cent. the value of the hardwoods manufactured into lumber in Canada during 1909. In view of the fact that the supply of hardwoods in the United States available for import into Canada is surely and rapidly disappearing, it is evident that whatever can be done to encourage the production of hardwoods in suitable localities in Canada should be done at once."

LUMBER VIA WATER TO MILLS.

There is a great asset in Northern Ontario in the shape of pulpwood. The Honorable Frank Cochrane, former provincial Minister of Lands, Forests and Mines, values Ontario's timber, etc., at approximately $400,000,000. Therein is the foundation of an active pulp and paper industry. Enormous quantities of wood suitable for making pulp and paper extend from the Eastern to the Western boundaries of the province along the line of the Transcontinental Railway. In that region there are estimated to be about 300,000,000 cords of this wood. There watercourses will co-operate with the railroad in transferring the lumber to the mills. The Transcontinental in its course, besides smaller streams, crosses the following large waterways:

River.	Length—Miles.
Abitibi	250
Frederick House	120
Mattagami	250
Makozhisk	200
Kapuskasi	200
Opazatika	125
Missinaibi	250
Kabinakagami	150
Kenogami	250
	1,795

The pulpwood can be floated down these streams to the railway crossing and manufactured into either pulp or paper.

CANADA'S PULPWOOD CONSUMPTION.

The pulpwood consumed in Canada in 1909 was approximately 445,408 tons, valued at $3,464,080, compared with the previous year's tonnage of 306,738 and value of $2,931,653. Ontario came second to Quebec in consumption, the figures in 1909 being 132,491 tons valued at $1,070,740. Quebec, like Ontario, has extensive spruce forests and abundant water powers. It has a more plentiful supply of labor than Northern Ontario has at present and with the possession of these three factors is responsible for more than one-half of the total pulpwood consumption in Canada. Quebec mills used 51.4 per cent of the pulpwood manufactured in the Dominion in 1909 while Ontario mills used 30.1 per cent.

There is no reason why Ontario should not equal, if not surpass Quebec in the matter of the pulpwood industry. Ontario has the required natural resources, but needs capital, labor and enterprise in its Northland. Spruce has proved the backbone of the pulp industry. More than 516,000 cords of that timber were manufactured into pulp in Canada during 1909. This was over four-fifths of the total pulpwood consumption. In this connection, it is recalled that Ontario is at present cutting only a little spruce. About one-sixth of the pulpwood used in 1909 was balsam. Ontario's cut of that lumber represented 15.5 per cent. of the Canadian total in 1909. Balsam appears to be as satisfactory for pulp manufacture as other species, for in recent years it has represented a higher cost at the mill than any other species, the prices per cord being in 1909; balsam, $[illegible]6; poplar, $5.81; spruce, $5.41; hemlock, $4.51.

ONE-FIFTH OF PULP MILLS ARE IN ONTARIO.

One-half the pulp mills of Canada, numbering fifty, are in Quebec, one-fifth in Ontario, and the remainder in the three provinces of New Brunswick, Nova Scotia and British Columbia.

Canada stands in an unique position in respect to its foreign trade in wood pulp and pulpwood, which has consisted entirely of exports. That is an advantage which has not been utilized by any means fully. It is also an advantage which has been minimized by the tendency to export wood in the raw form of pulpwood, rather than in manufactured form of wood pulp.

GROWING PULP AND PAPER EXPORTS.

It was in the early eighties that Canadian pulp and paper began to be shipped abroad, and by 1900 our total exports of pulp alone reached a value of $1,816, .16 of which $562,178 went to Great Britain, and $1,193,753 to the United States. In that year we shipped paper to the value of $61,012, of which $2,718 went to Great Britain, and $48,052 to the United States. We also shipped books and printed matter in that year amounting to $138,110, making an aggregate of over $2,000,000.

In 1910 Canadian exports of these products reached the following figures:—

1910.	To Great Britain.	To United States.	Total to all countries.
Pulp, mechanical	$888,898	$2,577,990	$3,545,751
Pulp, chemical	42,252	1,597,319	1,658,846
Paper and manufactures of	912,524	1,293,435	3,156,096
Books, etc	82,137	152,672	247,183
Stationery	....	....	23,380
	$1,925,811	$5,621,416	$8,631,256

In addition to these exports of manufactured goods, Canada exported in 1910, 965,271 cords of pulpwood, valued at $6,076,628, all going to the United States. This shows an increase of over 400 per cent. in ten years. Our exports of papers, books, and other printed matter also increased from $3,467,354 in 1900 to $18,359,342 in 1910.

UNITED STATES STATISTICS.

To show to what extent the natural advantages of Canada in the production of both pulp and paper are beginning to tell, the following figures of United States exports for the years 1905 and 1909 are given:—

Paper.	1905.	1909.
Writing and envelopes	$ 975,000	$1,068,000
Printing papers	3,059,000	2,178,000
Paper, hangings	304,000	266,000
Playing cards	225,000	195,000
Other papers	3,674,000	3,953,000
	$8,233,000	$7,660,000
Wood pulp	473,000	448,000
	$8,711,000	$8,108,000

The total exports of the United States in that period have decreased by over half a million dollars, while the imports of paper, and pulp and paper manufactures have largely increased, and notably those from Canada.

The following are the United States imports:—

	1905.	1909.
Books and printed matter, free	$2,609,000	$2,996,000
Books and printed matter, dutiable	1,980,000	2,630,000
Total	$4,589,000	$5,626,000
Wood pulp	4,500,000	8,629,263

Of the above, the total books and printed matter imported by the United States from Canada in 1905 was $107,000, and in 1909, $126,000; of wood pulp the total imported from Canada in 1905 was $2,669,000, and in 1909, $3,406,000, the quantity being in the latter year 328,807,000 pounds. United States imports of lithographs, labels and prints increased from $1,506,000 in 1905 to $4,450,000 in 1909, and other dutiable papers, $4,077,000 in 1905, and $6,278,000 in 1909. Of the lithographs, labels, etc., $1,570 came from Canada in 1905, and $4,786 in 1909, and of the miscellaneous dutiable papers, $171,899 came from Canada in 1905, and $631,983 in 1909.

CANADA THE BASE OF SUPPLIES.

In fine papers the United States is increasing its trade with Canada and with other countries, but in news print paper the Canadian mills are not only passing the United States in foreign markets, but are also increasing their exports to the United States in competition with American mills.

The provincial regulation requiring the actual manufacture of the raw materials into pulp and paper in Ontario seems amply justified. There is every prospect of Canada's supremacy in this direction. There is considerable fear in the United States respecting the loss of industries on account of Canadian development. This was expressed in the Wall Street Journal, June 1st, 1911, in discussing the claims of the American newspaper producers against the reciprocity agreement. That journal said:—

> "Leading newsprint authorities are practically a unit in agreeing that if the Canadian reciprocity measure becomes a law it will result in forcing American newsprint producers to move into Canada as fast as operating conditions and financial limitations make possible. It is no exaggeration to state that within five years after its enactment the logical tendency of the reciprocity measure, involving as it does absolutely free trade in newsprint, will result in from 25% to 30% of present American production going to Canada. In the case of big companies like the International Paper Company the percentage will be even higher—probably about 33%.

DIFFERENCE IN PRODUCTION COSTS.

> "The recently submitted report of the tariff board has proven officially that it costs $5.35 per ton less to make newsprint in Canada than in the United States. Average Canadian cost is $27.53 per ton and average cost in the United States is $32.88 per ton. Present duty of $3.75 per ton is, therefore, actually $1.60 less per ton than the difference in cost of making newsprint. This is perhaps one reason why, despite the slight duty now in existence, Canadian imports into this country have been increasing so rapidly.
>
> "This difference of $5.35 per ton in favor of Canadian mills is represented entirely by the price of wood pulp and sulphite fibre. For instance, ground wood pulp at the mill costs in the United States an average of $14.50 per ton and in Canada but $9.56 per ton; sulphite fibre costs $31.99 per ton in this country and $26.47 across the boundary. Materials entering into American-made newsprint

average $22.74 per ton of paper against $16.89 in Canada. Thus, despite certain undoubted mechanical advantages, American mills labor under a permanent disability to meet Canadian mills on equal terms."

A summary of the report of the American Tariff Board on this subject is given in Appendix X.

Although the reciprocity agreement failed to carry, the United States tariff on this item was reduced, having been passed by the House of Congress and the Senate as a separate item prior to the submission of the general scheme of reciprocity. In any event, the partial retention at least of our raw forest materials in the North and the maintenance of the provincial prohibition of the export of spruce and other woods suitable for pulp cut on Crown lands, is apparently a wise policy.

Depending on Canada.

The forests of Scandinavia, Canada's principal competitor in the production of pulp and newsprint, are gradually being reduced. The United States depends upon Canada for about a million cords of wood per year for its pulp mills. It is not prophesying too much to state that Canada will shortly supply more pulp and paper for the world's newspaper presses than any other country. The manufacture of the higher grades of paper will be a slower development but no less definite.

The possibilities in this direction in Northern Ontario would seem to demand aggressive action with a view to exploiting the timber resources of that country for the manufacture of pulp and paper and the companion industry of reforestration. In 1909, 59.5 per cent. of the pulpwood produced in Canada was exported in raw state and only 40.5 per cent manufactured at home. All the pulpwood exported since 1902 has gone to the United States. We may quote Mr. MacMillan on this vital phase:—

What We Shipped.

"In 1909 three-fifths of the pulpwood cut in Canada was shipped to the United States for manufacture. The consideration received for this 915 633 cords of wood was $5,752,659, or $6.28 per cord. This is an average value at the point of shipment of 71 cents per cord more than was paid by Canadian mills. Nearly all this wood went from Quebec; the average price received was only 45 cents per cord more than was paid by Quebec mills.

"The wood exported from Canada was manufactured into 340,615 tons of mechanical pulp and 287,514 tons of chemical pulp. Forest Products Bulletin No. 10 issued by the United States Census Bureau shows that on the average in the United States a cord of wood produces about one ton of mechanical pulp or one-half ton of chemical pulp, and that 37.2 per cent. of the wood imported is manufactured into mechanical pulp, 62.8 per cent. into chemical pulp.

If the Manufacture Had Been at Home.

"As the United States imports much more pulp than it exports, it would necessarily have imported this pulp from Canada had it not imported the wood. Exporting the wood to the United States brought in $5,752,659. Exporting the pulp, which that wood made would have brought, at the average prices paid by the United States importers in 1909, $16,719,418. If the manufacture were completed and the pulp made into paper in its final form before exporting the difference would be still greater.

"The pulpwood shipped from Canada in 1909 furnished 46.4 per cent. of the raw material used by the 90 pulp mills of New York State, 10.3 per cent. of the raw material manufactured in the 62 pulp mills of New England, Maine Massachusetts, New Hampshire and Vermont, and 6.1 per cent. of the raw material used by the 16 pulp mills of Pennsylvania. A larger quantity of pulpwood was exported in 1909 than in 1908.

"The manufacture of the 915,633 cords of wood exported in 1909 kept running at full capacity for the year 69 of the 251 pulp mills in the United States. If this pulpwood had been reduced to pulp in Canada, it would have supplied for the year 73 pulp mills of the average size of those already in Canada. The greater part of the pulpwood exported was cut in Quebec; if it had been manufactured in Quebec it would have kept running 71 mills of the same size as those now existing in Quebec."

NEED FOR CAPITAL.

The same considerations naturally apply also to Ontario. There are unique opportunities for the investment of capital in this industry in the Northland. Little criticism can be made of the complaints of men, who know that country and its possibilities, respecting the investment of many millions of Canadian dollars in foreign countries, when remunerative enterprises await exploitation—less than 500 miles from Toronto.

Lumber is floated down the watercourses of Northern Ontario, to Hull, for instance, where the manufacturing is done, increasing the Quebec province statistics. Logs sent on that long journey to-day will not reach the Quebec mills for a considerable time, perhaps two years. On the top of these drifting logs drifts also one of Ontario's industries, while money is lost by the manufacturer who is content to have his raw materials in transit to the factory for two or more years.

Montreal capitalists have invested many millions in the pulp and paper industry in Quebec province, in addition to obtaining British and foreign capital for the same purpose. The following table shows a few of the leading companies:—

Company	Quebec Province	Authorized Capital and Bonds.
Canada Paper....	Windsor Mills.	$ 1,000,000
Laurentide Paper............	Grand Mere........	4,000,000
Price Bros..................	Quebec City........	5,000,000
Wayagamack Paper..........	Three Rivers.......	5,000,000
*Canadian Power and Paper..	Lake St. John......	10,000,000

NORTHERN ONTARIO'S OPPORTUNITIES.

Five companies operating in Quebec alone represent authorized capital of $25,000,000 to exploit the industry in that province. Messrs.

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* Proposed plant.

Price Bros. & Co. obtained £1,000,000 of British capital in 1910, while the Wayagamack and Canadian Power & Paper Companies also became interested in that year. In June, 1910, a group of Montreal capitalists purchased more than 1,100 square miles of timber lands in the St. Maurice River district. Northern Ontario offers just as good opportunities for investment, and the attraction of capital along these lines should be encouraged.

There are 7,000 square miles of territory tributary to Lake Temiskaming on the Quebec side, covered with spruce, white and red pine, and birch. It is hoped that manufacturing will be started on the Ontario side, perhaps at Haileybury. In taking out the raw materials from one-fourteenth part of that area, $1,000,000 per annum has been expended for the past fifteen years. The impetus which manufacturing at Haileybury would give to general business, can be gathered from those figures, which refer only to the gathering of the raw materials.

PULPWOOD CONCESSIONS.

Early in 1911 the Ontario Government offered the Abitibi pulp limit for lease by tender. Unfortunately no satisfactory tenders were received at the time stipulated for their receipt. The successful tenderer was required to enter into an agreement with the Provincial Government, stipulating that he should erect on the limit a pulp and paper mill costing not less than $500,000. There were also conditions as to daily output and the number of employees. The successful bidder was required to pay dues of 40 cents per cord for spruce and 20 cents per cord for the other woods mentioned.

Some critics are inclined to think that these dues are too heavy. That is a question which should be well weighed by the authorities in considering the desirability of the establishment of pulp and paper mills in the North. The mill operator has also to take into account the fire risk. Everything should be done to encourage the establishment of mills in the Northland. Their operation will reduce the exports of raw material to the United States at the same time creating a new demand for labor, which in turn creates a new demand for housing accommodation and general supplies. The homesteader will have better markets for the pulpwood on his land. The supplies should naturally be obtained from Toronto and other cities in Old Ontario. As this matter is of extreme importance, it has been thought well to include in this report as Appendix III. a copy of the conditions governing the offer for lease by tender of the Abitibi pulp limits.

IV.

FIRE WASTE AND FIRE PROTECTION.

An unfortunate phase in the upbuilding of a new country in Canada is the fire waste. This applies both to forest areas and to towns. Northern Ontario has suffered in this way. Haileybury, Porcupine, Cobalt, Latchford and Cochrane have all experienced bad fires, the rebuilding of the town being necessary in some cases. If development can be undertaken in the North with a greater regard to this question than has been shown hitherto, time, energy, capital and labor will be conserved. The extent of our fire waste is not generally known. It is only when reliable statistics are considered that the appalling losses are realized.

The Dominion is burning property at the rate of $21,000,000 and 200 human lives per annum. In three years, 1909, 1910, and 1911, Canada's fire waste totalled $63,000,000, the past year contributing $21,459,575 of that sum. This year the losses have been at the rate of $41 per minute. These figures are gathered from the carefully compiled fire register of "The Monetary Times."

Fire Loss per Capita.

With a population of 7,100,000, the fire loss per capita in Canada last year was $2.98. The annual average losses for six nations in Europe have been compiled from records of varying years and grouped, with this result:—

Country.	Annual fire loss.	Loss per capita. Cents.
Austria	$ 7,601,389	29
Denmark	660,924	26
France	11,699,275	30
Germany	27,655,600	49
Italy	4,112,725	12
Switzerland	999,364	30

Or an average loss per capita of 33 cents.

In Berlin, where the losses amount annually to less than those of one moderately large fire in the United States, the excellent conditions are due to the attention paid to the methods of construction. The fire losses in Canada for the first four months of the current year totalled $5,361,875, equal to a daily loss of $44,682.

WASTE ACCOUNTS FOR HIGH INSURANCE RATES.

It is unreasonable for new towns to complain of high insurance rates. They must take early steps to minimize the fire risk and to install adequate fire protection. The National Board of Fire Underwriters of the United States, continuing its plan of education on the need of better protection, issued recently an exhaustive classification of fire losses in 1909, showing why the insurance companies are forced to ask higher rates in America than in Europe, and why rates in America itself necessarily vary. Taking thirty of the largest cities of the United States, the per capita loss in 1909 was shown to vary from $1.36 in St. Louis to $4.55 in Kansas City. Higher per capita loss was shown in some of the smaller centres, like the city of Racine, where it ran to $24.29. The total annual fire loss is estimated at $200,000,000, and fire specialists go so far as to assert that $150,000,000 of this is waste from negligence or lack of precautions.

IN PROPORTION, CANADA'S FIGURES ARE AS LARGE.

The table of comparisons drawn up by the underwriters from consular returns in 1905, the only recent year in which statistics of the kind were gathered in Europe, showed an average loss of 61 cents per capita for thirty European cities as against $3.10 for 252 American cities. Taking the number of fires to each 1,000 of population in America and in Europe, it was found to be 4.05 in the United States against.86 in Europe. Carelessness largely contributes to the fire waste.

HOW NORTHERN ONTARIO HAS SUFFERED.

The careless use of oil lamps in some of Northern Ontario's towns is particularly noticeable and constitutes a very dangerous fire risk. Many experts declare that it is possible to cut the losses in two. The heavy waste is not mysterious. The chief cause for surprise is that, under existing conditions, fires do not more frequently burn to the ground entire groups of buildings. This is especially the case in new towns, which have a weakness for shingle roofs, indifferent fire protection, and where every man is the law regarding the building he erects.

Among the reasons for our undesirable fire record have been given the following:—1. The moral hazard is not as good as it was in former years. 2. The variable climate in Canada. 3. Wood enters too largely into the general construction of many buildings. 4. The building bylaws are, generally speaking, defective.

PROTECTION OF THE FORESTS.

The protection of Northern Ontario's forests is a matter of great difficulty, although the Provincial Government is spending a considerable sum in fire ranging. In the forest reserves there were 202 men on duty in 1909 as rangers and $76,000 expended for fire ranging purposes. When it is known that the pine alone on these reserves is worth at least $90,000,000, the annual expenditure cannot be considered heavy. There is also a staff of fire rangers on the area of 20,000 miles of timber lands subject to license. One-half of the cost of the wages and expenses of fire ranging is borne by the licenses and the other half by the government. There were on duty on licenses land, in 1909, 450 rangers at a cost to the Government of about $60,000. Fire rangers were also employed along the larger rivers that are used as highways. The whole fire ranging staff on duty last summer aggregated nearly 1,000 men.

The railways are naturally a fire danger and fire rangers have been placed along the lines traversing the back country, the expense being charged to the railway companies. In 1909 175 rangers were employed at a cost of about $73,000. Commenting on this point, Honorable Frank Cochrane, former Provincial Minister of Lands, Forests and Mines, in his latest annual report, says:—

RAILWAYS AND THE FIRE LOSS.

"There is a splendid spruce forest all along this line, capable of producing great traffic for the railway, inducing the erection of pulp and paper mills, and affording employment to thousands of people, who will, in the near future, find happy and prosperous homes in that great clay belt. It will require great effort and considerable expense to protect this timber, but it will well re-pay all the money spent for this purpose, if the timber is preserved.

"The railways have been blamed as a prolific cause of forest fires. That construction causes forest destruction need no argument, for the evidence in the back parts of the Province to those travelling through it, is plain to the eye. The authorities of all the great railways have assured the Department time and again, that they are making every effort to prevent fires along their lines, and there is no doubt that this is true, as their prosperity and public life are endangered by the occurrence of forest fires along lines of railway. The tremendous interest that has, for the past few years, been taken in the protection of the forest from destruction by fire, has no doubt spurred them on to every effort to prevent fires along their lines, and we may hope for more care, and a better state of affairs in the future.

"The Conservation Commission of the Dominion is taking the matter up with a view to obtaining stringent legislation, to compel railways to exercise greater care and use better appliances than they have done in the past."

CONTIGUITY OF FOREST TO TOWN.

Another danger is the contiguity of thickly wooded land to new towns. This is noticeable in several towns where the bush is far too near the community. With the wind in a certain direction, a forest fire near the town might easily prove a serious menace and cause disaster. The use of lumber in construction is more or less imperative in the early stages of town building in the North, but proper fire protection should be established to counteract the fire risk thus created. The building of cement and brick structures should be encouraged. The municipal authorities may properly take the lead in this direction.

V.

WATER POWERS.

The water powers of Northern Ontario are another natural asset of great value. An unrevised estimate of Mr. J. B. Challies, C.E., of the Department of the Interior, shows that the minimum flow of development of Canada's water powers is estimated at 25,682,907 horse-power. His summary of the available water powers of the Dominion is as follows:—

Location.	Minimum flow development. h.p.	Present development. h.p.
Yukon	470,000	....
British Columbia	2,065,500	73,100
Alberta	1,144,000	1,330
Saskatchewan	500,000	....
Manitoba	505,000	18,000
North-West Territories	600,000	....
Ontario	3,129,168	331,157
Quebec	17,075,939	50,000
New Brunswick	150,000	....
Nova Scotia	54,300	13,300
TOTAL	25,693,907	486,887

Available Water Powers.

The revision of these figures would probably give Ontario a still larger minimum flow development. As it is, Ontario comes second only to Quebec. Mr. L. V. Rorke, Inspector of Surveys for the Ontario Government's Department of Lands, Forests and Mines, has estimated that there are 2,030,600 horse-power on the northern slope towards Hudson Bay, within a distance of 100 miles from the route of the National Transcontinental Railway. Mr. F. D. Monk, M.P., a member of the Commission of Conservation, states that in Ontario 3,724,000 horse-power is awaiting development. According to an estimate of the Commission of Conservation, Canada has developed 1,016,521 horse-power from water powers.

The largest of the rivers, the power of which can be used, are the Abitibi, the Mattagami and the Missinaibi, tributaries of the Moose River, the Kaqinakagami and Ogoke Rivers flowing into the Albany and the Winnipeg and English Rivers.

On the Mattagami River there are five important water falls, the largest being the Long Rapids Falls, with a natural head of 150 feet and a minimum flow of 5,008 cubic feet per second, which would give, under proper drainage, over 200,000 horse-power for 24 hours. On the same river the Grand Rapids, with a fall of 100 feet, is capable of developing 150,000 horse-power under drainage control, and the Little Long Falls, with a 50-foot head, would develop 108,000 horse-power. The 12 other falls on the river range from 56,800 horse-power down to 4,500 horse-power.

LARGE POWERS ON ABITIBI RIVER.

On the Abitibi River there is a series of falls above New Post with a total of 100 feet and an estimated minimum flow of 4,000 cubic feet per second, yielding under drainage regulation 124,000 horse-power.

On the Missinaibi River, within the available area at Conjurer's Chute and Hell's Gate, there is a fall of 250 feet and a minimum flow of 2,600 feet per second; the minimum 24 hour horse-power would be 75,000 horse-power. The White Dog Falls, on the Winnipeg River, with a head of 50 feet and a flow of 11,000 cubic feet per second, can develop 70,000 horse-power.

According to Mr. Rorke, the estimates, which give an aggregate of 2,030,600 horse-power, are careful and conservative, and are based on surveys and measurements of the flow of water and the sustaining drainage area. He gives the following summary, respecting the more important rivers on the northern slope:—

River	Total height in falls.	Possible horse-power development
Abitibi, Black and Frederick House	451 ft.	359,300
Mattagami, Kapuskasing and Ground Hog	830 ft.	393,800
Missinaibi and Opazatika	534 ft.	292,100
Kabinakagami and Kenogami	486 ft.	98,800
Ogoke	170 ft.	216,600
Winnipeg and English	91 ft.	370,000
TOTAL AGGREGATE		2,030,600

In compiling this aggregate estimate, the error is a minus quantity. Many rapids on these large rivers are not noted and many falls on the smaller tributaries, such as the French, Little Abitibi, Muskego and Wabigoon rivers, which will develop from 500 to 5,000 horse-power, do not figure in this total, neither is the water power on the River Albany—which at the present time forms a portion of the northern boundary of the province and has a drainage basin of about 50,000 square miles—included. The margin will be quite sufficient to balance the loss in converting from theoretical to practical horse-power; the loss in transmission of energy to points within reasonable distance, and all other losses which accrue between the water power in its natural state and the manufactured article by means of that power.

"As to the ultimate development and disposal of this great amount of water power," says Mr. Rorke, "suffice it to say that upon the completion of the railways, it will all be within a distance of 100 miles from railway facilities, and thus can be transmitted without too great a loss, to meet the raw material at shipping points."

Black Coal and "White Coal."

The value of these powers is considerable. A careful calculation shows that the maintenance of one horse-power per annum from steam power involves a consumption of 21.9 tons of coal. On this basis, the available water powers of Ontario, omitting Niagara Falls power, represent a combined energy which, if it were being generated by coal and steam, would involve a coal consumption of 68,528,779 tons per annum.

An excellent illustration of the actual effect of water power development in Northern Ontario may be gathered in relation to the introduction of electric and compressed air power from water powers in the Cobalt district. Prior to these power developments, the Temiskaming and Northern Ontario Railway hauled considerable quantities of coal to Cobalt. The following statement of coal received at Cobalt for the two years 1909 and 1910 shows how quickly the shipments were reduced after the advent of the developed power in May, 1910:—

Month.	1909—Tons.	1910—Tons.
January	7,687	8,378
February	8,136	8,462
March	10,173	12,212
April	9,930	3,381
May	5,771	3,079
June	4,102	1,817
July	5,677	702
August	5,060	2,106
September	6,173	2,016
October	9,007	1,817
November	14,957	3,295
December	18,743	5,596
TOTAL	105,416	52,861

Freight and Coal Cost.

In May, 1909, before the water power was used, the coal received at Cobalt was 5,771 tons, and in June, a year later, the shipments had declined to 1,817 tons, a decrease of 3,954 tons, or 217 per cent. In

November and December particularly is the decline noticeable. The total coal shipments to Cobalt in those two months in 1909 were 33,700 tons and in 1910, 8,891 tons, a decrease of 24,809 tons or 279 per cent.

In 1909 the boiler house capacity in the Cobalt district was about 11,000 horse-power. Practically all the boilers making up the above total were burning coal. In the two years 1908 and 1909, 161,175 tons of coal were brought into Cobalt from the United States. The cost of freight is higher than the original cost of the coal at point of loading on cars. The average cost of coal to the mines is about $5.50 per ton, f.o.b. Cobalt. Even in the most economical power plants in this mining camp, the cost of power generation is high. In some plants it is more than $175 per horse-power per annum. Mr. A. A. Cole, the mining engineer, estimates the average price in the camp at over $150 per horse-power per annum. About $3,500,000 have been invested by three power companies at Cobalt.

WOOD SUPPLY IS DISPLACED.

In the early stages of mining in Northern Ontario, the abundant wood supply usually suffices for steam production. The varieties of wood, however, are not well suited for fuel purposes in the mining regions, and, again, the supply soon becomes exhausted when operation is extensive. Coal then displaces wood if a railroad is near the camp. The initial expense of introducing water power in permanent mining camps is heavy, but it is far cheaper in the end than steam power produced by either wood or coal.

The chief essential for water power is that the fall shall be sufficient in volume and descent to justify the conversion of its energy into electric current. This condition exists in every mining camp in Northern Ontario. Porcupine, the new gold field, is proving permanently workable. There are waterfalls on the Mattigami, Grassy and other rivers, which can be harnessed for mine development there. The silver mines of Gowganda and the gold district of Larder Lake are equally fortunate.

Lake Temiskaming, Kipawa and Quinze-Expanse, with an aggregate area of 315 square miles, form a system of reservoirs that can be controlled cheaply. A reservoir of 100 square miles in extent, with a layer twenty feet in depth stored on it, would give a 2,000 square mile feet of storage. That is the capacity of each of these three great lakes.

POWERS IN THREE DISTRICTS.

It is doubtful wgether any strictly accurate estimate of Northern Ontario's water powers has been obtained. The rugged natural conditions and unsettled parts in the North are difficult to travel, for as yet the railroad has only tapped the country. Some details have been given in the fifth report of the Ontario Hydro-Electric Power Commission, dealing with the Algoma, Thunder Bay and Rainy River Districts.

Of the 349,765 minimum 24-horse-power H.H., there is a present installation of only 36,530 horse-power.

ONTARIO'S DEVELOPED WATER POWERS.

Figures have been compiled by Mr. Roderick J. Parke showing the amount of water power developed in Ontario, together with the amount of capital invested in each locality. The capital investment totalled $84,265,100 and the water power development 801,536.

On the subject of investment in water powers, Mr. Parke says:—

> "As a field for the investment of capital on a safe and sound basis, Canada's water powers cannot be surpassed. It is true that at present the 17,000,000 horse-power known to exist cannot all be utilized because in some cases the cost of development will be prohibitive and in many other case sufficiently populous centres, upon which the water powers must depend for the market for their output, have not been settled. But as our greatest artificial resource, the railway, increases in mileage and ability to render service, markets for these undeveloped and at present almost relatively valueless water powers will be created. Assuming that about one-third of the total possible horse-power cannot be profitably developed or may never find a market on account of adverse local conditions, there still remains about 12,000,000 horse-power to render service to the needs of the country and allowing for roughly the 2,000,000 horse-power already developed leaves a remainder of 10,000,000 horse-power capable of development and useful application. On the basis of an average investment of $96 per horse-power Canada offers a field for the profitable and sound investment of $960,000,000 of capital."

IN THE GREAT CLAY BELT.

In the fifteenth annual report of the Ontario Bureau of Mines a list is given of a few of the many fine water powers in the newer regions of Ontario, and the statement made that the others are running to waste. The report continues:—

> "It is certain that the part to be played by water power in the industrial development of the province will be a very important one. Nowhere will it be more important than in the great clay belt north of the height of land, where the new province now taking form contains many magnificent streams longer and more important than their compeers draining into the great lakes, but marked like them by numerous rapids, falls and cascades."

SOME SMALL OBSTACLES.

It is not inopportune here to suggest that more modern geographical names might with advantage be adopted in the Northland. While reluctance is natural in abandoning the old Indian names, business interests will not long consent to stumble over such names as Poshkokagan, Pikitigushi and Namewaminikan. If modern names are not found, the business man will, undoubtedly, invent abbreviations for himself.

The main watershed dividing the system of the Great Lakes from that of Hudson Bay runs in a northwesterly direction from the eastern boundary of the province north of Lake Temiskaming to the head of Lake St. Joseph on the northern boundary, a distance of about 500 miles. It consists of a tableland or plateau, and is estimated to have an average width of about 70 miles, or an area of about 35,000 square miles. With the slopes on both sides, it affords an extensive catchment surface for the streams running to the north and south. Its elevation will average 1,400 or 1,500 feet above the level of the sea, or 900 feet above Lakes Huron and Superior.

In places it approaches the shore of the latter lake, and for the greater part of its extent is situated at a comparatively short distance from either of these bodies of water. The rivers and streams, consequently, which flow from it into the great lakes, though mostly of considerable volume, are not of great length, and their descent is usually rapid and abrupt, and marked in many places by cascades and falls. This is most satisfactory, for where sudden falls or rapids occur, creating a marked difference in the water level, the energy of the river is concentrated within a short space and can be utilized. The large lake area of North Ontario acts as a storage basin, regulating the flow of water and rendering it constant and practically uniform throughout the year.

How Resources Co-operate.

The valuable combination in Northern Ontario exists in few other lands. The water powers are largely found among the pine and hardwood forests and in many cases are contiguous to mineral deposits. Thus the raw materials and the power for their manufacture are side by side. There is scarcely any limit to the possible industrial development as a result of the Northland's water power resources. The waterfalls and the lumber may co-operate in the establishment of sawmills, sash and door factories, planing mills, pulp mills, match factories and other woodworking industries. The waterfalls and the minerals may co-operate in the establishment of stamp mills and other mining plants.

Electrically driven railways might act as feeders to the main and branch lines of the Temiskaming and Northern Ontario road. Development is accomplished on the lines of communication. The transportation of lumber, ore, raw and finished materials, and supplies would thus be facilitated, the water powers being the basis.

With the rapid progress made in the science of transmitting electric energy, many other industries can avail themselves of cheap power without necessarily building their factories in the immediate vicinity of the waterfall. Flour mills, sugar factories, chemical factories and many others could take advantage of the water resources.

WATER POWERS ARE LEASED.

Previous to 1898 no reservation of water powers was made in grants of land by the Crown. If a water power was situated on a lot or location, and the bed of the river—the actual site of the power—was included in the area of the lot, possession passed to the grantee. In 1898 the Legislature of Ontario passed an Act providing for the reservation of water powers and for the making of regulations regarding their disposal by the Lieutenant-Governor-in-Council. These regulations provided that all water powers having a natural capacity at the low-water stage of more than 150 horse-power should not pass with the land, but should be leased, together with a sufficient area adjoining the fall, for its proper development. The lease provided:—

(a) For the payment of an annual rent to the Crown.
(b) For the development of a specified quantity of power within a given time.
(c) For the supplying of surplus power by the lessees to others requiring it.
(d) For the regulation by the Lieutenant-Governor-in-Council of the rates and conditions upon which such surplus power should be supplied.
(e) For the development by the lessees of the full capacity of the power if there were a *bona fide* demand for it, of which demand the Lieutenant-Governor-in-Council should be the judge.

LARGE INVESTMENTS MADE.

In 1907 these regulations were extended and the form of lease improved, the Hydro-Electric Power Commission being constituted the agent of the Government in dealing with water powers subsequent to their lease by the Crown.

Under the Act of 1898 and the Regulations pertaining thereto, some twenty water powers, providing for a minimum development of 26,600 horse-power and a maximum of 53,700 horse-power have been leased. The annual revenue accruing to the Government from these leases is $12,000. Large investments, amounting to several millions of dollars, have been made by the lessees in dams, improvements and machinery for the development and utilization of these powers.

The regulations relating to the leasing of water powers in Ontario are reprinted in Appendix IV. of this report. No lease will be granted for a longer term than 20 years, but the lessee has the right of renewal for two further and successive terms of ten years each, upon such terms and conditions as may be agreed upon or fixed by the Government. The question of a longer lease and longer renewals deserves, perhaps, further consideration.

THE GOVERNMENT'S POLICY.

In an address delivered by the Honorable Frank Cochrane before the first annual meeting of the Commission of Conservation, he said:—

> "There can be no doubt that the use of water power will become more and more general, especially as mineral fuel tends to become dearer and scarcer. The possession of an effective measure of control in the public interest over the water powers of the Province, is most important. Briefly, the policy of the Government in dealing with this item of the natural resources is to obtain a fair revenue for the public chest, while at the same time encouraging the development and utilization of these powers and guarding against their being monopolized or being held merely or speculative purposes."

VI.

ONTARIO'S CROP PRODUCTION.

Before considering the vast agricultural possibilities in Northern Ontario, it will be well to analyze some recent crop returns showing what Old Ontario, which had to clear its land for farming, as will be done in the North, has accomplished. The field crops of Canada in 1911 realized a value placed by the Department of Agriculture of $565,711,600, compared with $507,085,000 in 1910. On such substantial figures can be based our claim to being an agricultural country made and in the making. The decrease in the amount represents losses due from Western crop failures in restricted sections of the country. The field crops, being only one branch of agriculture, by no means represent the total value of farm products. The dairy and cattle raising in some sections exceed in the value of output that of the field crops. In other sections fruit growing is an important branch of the industry, not less than 330,000 acres being devoted to it in Ontario.

HEAVY FIELD CROPS.

The foundation of the industry is the field crops, and largely indicates the general position of the farmers. Altogether, little complaint can be made of the results for 1910 and 1911. The crop area is estimated at 32,853,074 acres, compared with 32,711,000 acres in 1910. Eastern Canada made a better record than in 1909, while Western Canada suffered a slight loss, which, however, will, undoubtedly, act as an impetus to more scientific agriculture in the prairie provinces. Statistics for 1911 will be found in Appendix XI. The values of the various crops in 1910 are estimated as follows:

Crop.	Value.
Hay	$147,716,000
Oats	114,365,000
Wheat	112,973,000
Potatoes	33,446,000
Turnips, etc	21,444,000
Barley	21,400,000
Fodder corn	11,957,000
Corn for husking	10,135,000
Mixed grains	9,953,000
Flax	7,898,000

Crop.	Value.
Peas	5,754,000
Buckwheat	4,078,000
Rye	1,083,000
Beans	2,094,000
Sugar beets	887,000

VALUE OF WHEAT.

The value of the wheat crop dropped into third place, hay and oats taking precedence. More than half the crop product goes to the feeding of live stock. This is how the various provinces contributed to the total value of field crops:

Ontario	$204,002,000
Quebec	97,007,000
Saskatchewan	84,138,000
Manitoba	55,206,000
Nova Scotia	21,203,000
New Brunswick	18,959,000
Alberta	16,582,000
Prince Edward Island	9,988,000
TOTAL	$507,085,000

ONTARIO LEADS AGAIN.

The value of the field crops in Manitoba, Saskatchewan and Alberta amounted to $155,926,000, compared to the value of Old Ontario's production of $204,002,000. The production in the Maritime Provinces was valued at $50,150,000. Aside from Quebec, Ontario produced field crops last year valued at only $2,000,000 less than those of the rest of Canada, the figures being: Ontario, $204,002,000; the rest of Canada (Quebec omitted), $206,076,000. Quebec's production was valued at $97,007,000—less than half the production of Ontario. Seven-tenths of the field crop of Canada are produced east of Manitoba, four-tenths being credited to Ontario, not quite two-tenths to Quebec and about one-tenth to the Maritime Provinces.

As these figures represent actual production and we have to figure the agricultural possibilities of New Ontario, a strenuous pace is likely to be set Western Canada by Ontario in the matter of production.

ONTARIO'S SPLENDID HARVEST.

Ontario had an excellent harvest in 1910, and the following statistics (the latest available) of the principal field crops of Ontario for 1911 show the acreage as compiled from individual returns made by farmers to the Ontario Bureau of Industries and the yields as estimated by a large and experienced staff of correspondents, who give probable yields according to conditions on August 5th, 1911:

Field Crops.	Acres.	Production. Bush.	Yield per Acre. Bush.
Fall wheat:			
1911	837,492	17,034,052	20.3
1910	743,473	19,837,172	26.7
1882-1910	851,781	17,878,244	21.0
Spring wheat:			
1911	133,711	2,375,843	17.8
1910	129,319	2,489,833	19.3
1882-1910	375,471	5,975,610	15.9
Barley:			
1911	616,977	16,766,319	27.2
1910	626,144	19,103,107	30.5
1882-1910	652,303	18,115,316	27.8
Oats:			
1911	2,699,230	88,261,352	32.7
1910	2,757,933	102,084,924	37.0
1882-1910	2,203,132	78,663,994	35.7
Peas:			
1911	304,491	4,773,513	15.7
1910	403,414	6,016,003	14.9
1882-1910	619,805	11,986,718	19.3
Beans:			
1911	51,508	925,228	18.0
1910	49,778	892,927	17.9
1882-1910	42,314	726,644	17.2
Rye:			
1911	98,652	1,624,572	16.5
1910	95,397	1,620,333	17.0
1882-1910	115,649	1,894,183	16.4
Hay and Clover:			
		Tons	Tons
1911	3,301,468	4,238,362	1.28
1910	3,204,021	5,492,653	1.71
1882-1910	2,604,627	3,811,172	1.46

WHAT HAS BEEN AND WILL BE DONE.

As a sidelight on what Ontario can do when its Northland is settled, we may glance at what Old Ontario alone has done in agricultural production, as compared with the total Canadian production. The following table shows the products of field crops in 1871 and 1901, the latest census figures available for a comparison of the provincial with the Canadian output:—

Crop.	1871.		1901.	
	Canada.	Ontario.	Canada.	Ontario.
Wheat	16,723,873	14,233,389	55,572,368	24,418,907
Barley	11,496,038	9,461,233	22,224,366	16,087,862
Oats	42,489,453	22,138,958	151,497,407	88,138 974
Rye	1,064,358	547,609	2,316,793	2,032,385
Corn	3,802,830	3,148,467	25,873,919	24,463,694
Buckwheat	3,726,484	585,158	4,547,159	1,056,998
Peas	9,905,720	7,653,545	12,348,943	11,351,646
Beans	220,644	107,925	861,327	767,255
Potatoes	47,330,187	17,138,534	55,362,635	20,042,258
Turnips	24,339,476	22,455,543	76,075,642	63,368,463
Other Roots	3,553,260	2,706,903		
Grass and Clover Seeds	348,605	189,716	288,275	214,083
Bushels	165,000.928	100,366,980	406,968,834	251,942,525
Hay, tons	3,818,641	1,804,476	7,852,731	2,852,465
Hops, lbs	1,711,789	1,188,940	1,004,216	603,075
Tobacco, lbs	1,595,932	399,870	11 266,732	3,503,739

Forty years ago, of the total crops enumerated above and amounting to 165,000,928 bushels, Ontario was responsible for 100,366,980 bushels. Ten years ago, the same crops measured 406,968,834, Ontario producing much more than half or 251,942,525 bushels. Last year, as was noted previously, Ontario grew $204,002,000 worth of field crops of Canada's total value of $507,[illegible]85,000.

FRUIT GROWING POSSIBILITIES.

The following figures afford a similar comparison in the matter of fruits:

Fruits.	1871.		1901.	
	Canada.	Ontario.	Canada.	Ontario.
Apples, bush	6,365,315	5,486,504	18,626,186	12,631,264
Peaches, bush	....	....	545,415	539,482
Pears, bush	....	....	531,837	487,759
Plums, bush	....	....	557,875	337,108
Cherries, bush	....	....	336,751	132,177
Other Fruits, bush	358,963	242,878	70,396	40,108
Grapes bush	1,126,402	1,028,431	24,302,634	23,156,478
Small Fruits, bush	....	....	21,707,791	16,232,020
Bushels	7,850,680	6 757,813	66,678,885	54,556,396

Practically the whole of Canada's fruit production, forty years ago, was the output of Ontario. According to the census figures of 1901, Ontario grew 54,000,000 bushels of the Canadian total aggregating 66,000,000 bushels. While British Columbia's progress along this line has been marked in recent years, Ontario has not lost ground. There are fruit growing possibilities in the North, although considerable settlement must be accomplished before fruit raising can be carried on there with success. Up to the present this industry has been practically neglected. An indication of possible results is seen in the splendid wild fruit which grows in the clay belt. A few farmers who have specialized on fruit growing have obtained good results.

LIVE STOCK AS AN ASSET.

Live stock will prove an early asset in the Northland, as soon as the country becomes cleared to a greater extent. The following table shows what Ontario possessed in this line, according to the census returns:—

	1871.		1901.	
Live Stock.	Canada.	Ontario.	Canada.	Ontario.
Horses, over 3 years old	643,171	368,585	1,304,910	594,412
Horses, under 3 years	193,572	120,416	272,583	126,726
Milch Cows, 3 years	1,251,209	638,759	2,408,677	1,065,763
Other Horned Cattle	1,373,081	764,415	3,167,774	1,422,043
Sheep, 3 years	3,155,509	1,514,914	2,510,239	1,046,456
Swine, 3 years	1,366,083	874,664	2,353,828	1,562,696
Poultry	....	....	17,922,658	10,464,551
Hives of Bees, 3 years	144,791	94,604	189,986	116,403
Number	8,127,416	4,376,357	30,130,655	16,399,050

Of the Canadian total live stock forty years ago, numbering 8,127,000, Ontario possessed 4,376,000. This proportion of more than half was still retained ten years ago, when the Canadian total was 30,000,000 and Ontario's figures 16,000,000. According to census figures, June 30, 1911, Ontario had 6,029,300 live stock, viz: 791,000 horses, 1,234,500 milch cows, 1,558,600 other cattle, 975,400 sheep, 1,469,800 swine.

The value of farm property in Canada in 1901, the date of the census, was $1,787,102,630, compared with Ontario's total of $932,488,069, and the average value of occupied farm land, 1910, $48 per acre.

WHEN THE LAND IS SETTLED.

Ontario's agricultural production accounts for a large proportion of the Canadian total. The results have been accomplished by utilizing the available land only in the lower portion of the province. With 20,000,000 acres of known, undeveloped agricultural lands in the North, one may gather an idea of what Ontario's production will be when the Northland becomes settled.

VII.

AGRICULTURAL LANDS AND RESOURCES.

Dwellers in the older parts of the province, where thriving cities, well-cleared lands and prosperous farmers are found, are sometimes apt to conclude that the Northern belt is a comparatively unimportant strip. Largely to agricultural prosperity in Old Ontario and the West can be ascribed the neglect of latent prosperity in New Ontario. The necessity of immediate settlement in the North can be realized to some extent when we know that of the 140,000,000 acres constituting the area of Ontario, only 46,000,000 acres are surveyed, leaving an area unsurveyed of 94,000,000 acres.

Sales, locations, etc., amounting to 24,000,000 reduce the total remaining in the Crown's possession to 116,000,000 acres. Of that, as previously noted, 20,000,000 acres are known to be valuable agricultural land. When the Northern country becomes traversed further, that total will, undoubtedly, be enlarged. It was but ten years ago when the Provincial Government authorities thought we had only 15,000,000 acres of good land in that region.

Railroad Steel Helps.

Railroad construction is acting, as usual, as one of the first pioneers. The more steel that is laid in agricultural districts, the quicker will be the settlement of the land, the greater the agricultural output and the stronger the impetus to business conditions generally. Mining activities have also brought new regions into contact with the influences of civilization. These two factors, however, must be regarded to some extent as creators of temporary business. There is a substantial and permanent benefit to be derived from railroads placed in a new country. But the business resulting from actual railroad construction activity and mining operations—the construction and mining camps—is temporary. This is an important consideration when we know that some towns in Northern Ontario have been born and nurtured on railroad construction and mining work.

Looking around for a permanent basis of business revenue, we find, fortunately, undeveloped agricultural resources of great extent and unlimited value. Agriculture, therefore, must be considered the backbone of the Northland. Farming operations will prove the staple industry which will maintain existing towns, create new ones and give railway commissioners and transportation presidents much to think about respecting their policy in the North.

ONTARIO'S RIVAL.

The most serious rival to the rapid settlement of New Ontario are the well-advertised inducements of the Western provinces. Conditions in the two sections of the country are different. The West has certain advantages unknown in the North, while that country offers advantages which the West can never give. In competing for new population, there is no cause for jealousy between Ontario and its progressive sister provinces. In the past few years Manitoba, Saskatchewan and Alberta have absorbed by far the greater share of immigration, getting a large proportion especially of the incoming American farmers, a valuable asset. Ontario has also supplied the West with thousands of men and millions of money.

The prospective settler standing, say, in Toronto, undecided as to whether he will board the train for the Northland or the Far West has many good reasons, without making invidious comparisons, for choosing Northern Ontario. He may locate within a comparatively short distance of a railroad, an important factor in considering the shipment of his products to the markets, which in this case lie along the line of the railway and could scarcely be nearer at hand. The climate is good. The question of cold is no longer considered in Canadian development. The cold is of health-giving quality and common to all parts of the Dominion in the winter months. History has almost invariably been made by pioneers in cold climates. Excessive warmth saps the backbone.

JUST ONE EXAMPLE.

Excellent farm locations are available throughout the North. Take, for example, the case of two husky Britishers located a few miles from Cochrane. These men have a little capital, and the Government have practically given each 160 acres. It is heavily timbered. A sawmill, now being erected, will eat all the lumber they cut and care to sell. They are eight miles from town and two from the railroad. The corner of one holding prods the Abitibi River, which will act as freight carrier, as means of transportation and as a yielder of piscatorial food. Somewhere on the holding is a small lake. Their log house is built on the bank of a valley, the hills sheltering it from the north and east winds. A stream runs around the hill and will ripple past the house front. Theirs is an almost ideal location.

IS NOT A DRAWBACK.

It is difficult to understand why the fact that the land in this province is heavily timbered is considered by some as an unqualified drawback. To the man with or without capital it is an asset. On top of 160 acres of land are many thousands of feet of lumber. Enough of this is marketable to provide the settler with means of subsistence until part at least of his land is cleared and ready for growing. At the same time he has standing around his stove an unlimited supply of firewood. There is no doubt that the clearing is a strenuous task, but the reward is lumber worth many dollars, materials for farm buildings, firewood, and farm land of the best quality. Mr. Arthur W. Roebuck, of New Liskeard, has given a vivid picture of the settlers' beginning in the North. He says:

A True Word Picture.

"When he arrives on the scene of his future labors he may well be appalled at the tremendous task which confronts him. As he breaks his way through the tangled shrubbery in a struggle merely to survey the wilderness which he plans to transform into a farm, his courage may be staggered with the apparent enormity of the labor he has undertaken. One could hardly blame him if standing awe-struck in the shadow of the pines he cynically resolved that life is short and time is fleeting.

"But the uncut road looks harder than it really is. The settler builds a cabin out of the logs he fells on the spot and in the course of a few days has a warm and very habitable house without the expenditure of five dollars capital. And then he commences patiently to clear. He may enter the woods with an axe as his only possession and with every stroke he is cutting in two directions. He is making immediate revenue and he is preparing the soil for the plough.

Money From Pulpwood.

"If he takes a pulpwood contract, and they are always obtainable, he is paid by the companies in instalments as the wood is hewn and piled. The instalments are sufficient to cover the cost of labor and at the close of the season when he draws, or has the wood drawn to market, he has a fairly good profit—money actually in hand. With what he has made he may grub up the stumps and clean up the underbrush in piles for burning. The land is not nearly so hard to clear as that which the settlers of Old Ontario successfully brought under cultivation and this under much more difficult social conditions."

Compared with the pioneers of the old days, the prospective settler in Northern Ontario commences under excellent conditions. A careful observer must, however, be impressed with the imperative necessity of road cutting in the North. An appropriation has been made by the Provincial Government with this object in view for that portion of the clay belt around Cochrane. It amounts to about one-fifth of the sum which has actually been expended in building roads in the town of Cochrane alone. A few thousand dollars for roads is swallowed up by the bush country in a short time and with comparatively little result. This question should be met at once, as present conditions will, undoubtedly, deter many prospective farmers from locating in New Ontario.

GOVERNMENT MUST CUT ROADS.

The work which confronts the settler is sufficient without giving him the additional duty of hacking a way to his farm. As a business proposition, the expenditure of a large sum of money on this particular development is justified. Every new settler is a material asset, and with the many natural advantages of the North, together with Government assistance in road cutting, new settlers will naturally turn their steps Northward.

A suggestion has been made by Mr. R. Neely, of Thornloe, which is deserving of consideration. This is that the Government should build a road on each of the four sides of the township to be opened up, and five roads across from side to side. The cost, he said, would be $42,000, and a charge of $300 per lot against the land in the township would meet the cost. This policy followed in all the opened townships of the North would undoubtedly give an impetus to settlement.

COST OF CLEARING LAND.

The question as to the cost of clearing the land was put recently to a number of farmers in different districts in the North. The answer varied from $100 to $5 per acre. Much depends on the character of the timber; a good deal depends, too, on the manner in which the work is done. Where the land is heavily timbered, with a large proportion of white wood, and the whole is cleared off at once—stumps, roots and all—the cost was estimated by one man at $100 per acre. Where the land has been swept by heavy bush fires, and only a few dry sticks are left to deal with, the cost of clearing was put by another at $5.

The most reliable estimate, where the work of clearing a fairly heavily timbered lot is wisely done, places the cost at around $35 per acre. In clearing in this way, the best timber is taken off the part to be cleared, and the rubbish is fired when dry. The timber that remains is then cut and burned, and the stumps are left for a year or two, when they can be removed with comparative ease.

READY-MADE FARMS.

That the Provincial Government should clear certain areas, erect some buildings, making all a charge upon the land, is a suggestion of Mr. R. S. Gourlay, President of the Toronto Board of Trade, and others. "Until this is done," says one gentleman, "people will not go in great numbers while the prairie lands offer such an easy stand to the farmer." This idea of ready-made farms deserves at least a test. It is contended, with some reason, that if such a scheme is deemed advisable in many parts of Western Canada, where it has met with success, it is as equally desirable in Northern Ontario. No harm can accrue from making a fair trial of such an undertaking.

SOIL OF THE GREAT CLAY BELT.

Much is heard of the agricultural possibilities of the clay belt which begins at Haileybury. From there North it extends without a break for 41 miles. A stretch of 25 miles studded with rock then intervenes, after which there are another eighty miles of clay to the end of the Government railroad. The clay belt runs east and west on the Grand Trunk Pacific and extends further North at least 120 miles. This clay soil, which has on rolling land a depth of at least 20 feet of clay, is the section now opened by the Temiskaming and the National Transcontinental Railroads. A writer in "The Weekly Sun," Toronto, gives a good idea of the excellent soil found here:—

> "The rolling land—where it had been cleared but not drained—was in excellent condition for cultivation even after an unusually wet autumn The level land was water soaked, and it is quite clear drainage will be necessary in that soil before it can be made available for satisfactory crop production. Much of the level land towards the northern limit is covered with a mossy growth which must be burned off before cultivation begins. In all cases there is a layer of rich vegetable mould over a strong clay. Not even the soil of Lambton or Essex is more easily worked than is that of the Northern clay belt."

EXAMPLES OF CROP PRODUCTION.

There is no necessity here to detail the crop results on the area which has already been cultivated. For two years in succession Mr. E. F. Stephenson, who combines the avocations of newspaper work and farming, has grown fall wheat which weighed 64 pounds to the measured bushel, while other cereals were quite as good. He has also grown swede turnips weighing 13 pounds each. The same kind of turnips have been produced on land in the Temiskaming region, which had never been fertilized, which weighed from 14 to 18 pounds each. No kind of crop will so thoroughly test the strength of the soil as turnips.

Cabbages have been shown at the New Liskeard fair weighing 20 pounds each, potatoes weighing from one to three pounds each, parsnips and long field carrots, 26 inches in length and long blood beets 16 inches in length. Indian corn, melons, citrons, pumpkins, squash, tomatoes, etc., ripen to perfection. Splendid fall wheat has been produced at Matheson, 100 miles north of New Liskeard. Good results have been achieved at the Governmental experimental farm at Monteith. Crop raising in Northern Ontario has long passed the experimental stage. The land awaits only the farmer. All else is there.

MARKETS ARE THERE.

The Northern Ontario's farmer's markets are close at hand. As is shown later, there is an estimated population in the towns, mining, lumber and railroad camps, of between North Bay and Cochrane, of 47,696, a valuable and contiguous market. The fact that farmers of Nova Scotia and New Brunswick can grow and ship potatoes to Temiskaming, for instance, at a profit is an indication of market conditions. As Mr. C. C. James, Deputy Minister of Agriculture, has said, "The markets are existing in Northern Ontario in advance of the settler." The prices obtained for the farm products, generally speaking, represent regular market quotations in Old Ontario, plus cost of carriage to Cobalt, Liskeard and other points in the North. Everything which can be grown in Old Ontario or Quebec can be successfully grown in New Ontario.

NO NEED FOR "WHEAT MADNESS."

While splendid wheat can and has been grown in Northern Ontario, there is no necessity for the farmers in that country to turn most of their attention to wheat growing to the exclusion of other crops. This has been done in Western Canada, and only during recent years have the farmers there given attention to mixed farming. It is not inopportune to quote a letter received from Sir William Whyte, former Vice-President of the Canadian Pacific Railway:—

"There is one bad feature in connection with farming in the three prairie provinces, and that is that the farmers are 'wheat mad,' that is, they are devoting the whole of their time and attention to the growing of wheat to the exclusion of dairy products. As an illustration: The Canadian Pacific imports nearly all chickens used in its dining cars and hotels from the United States. Eighty carloads of eggs came into Winnipeg from the United States last year. That represents twelve millions of eggs. We are now importing cream into Winnipeg from the United States. Celery and other vegetables are imported, and butter is not infrequently imported from Ontario.

NEED FOR MIXED FARMING.

"This condition of affairs is to be deplored, because the money that is sent from this country into the United States for articles that can as well be produced in our own country is a great loss to the country, but so long as the farmer can make the growing of wheat profitable, he will not, I fear, turn his attention to mixed farming, because there is less labor attached to the growing of wheat than the mixed farming. The wheat-growing farmer after he had disposed of his wheat has no further responsibility on his farm, except the care of his horses, and this can be taken care of by a hired man, whereas if he were following mixed farming to any extent he would have to live on the farm all the year or hire a responsible man to look after the care of pigs, cattle, poultry, etc."

This is good advice and applies not only to the farmer in the prairie provinces, but to the prospective agriculturist in Northern Ontario.

VIII.

THE NEED FOR AGRICULTURAL DEVELOPMENT.

With these wonderful agricultural resources, offering careers, health and prosperity, it is at first glance difficult to understand why Northern Ontario is peopled with such a small farming population. Among the principal reasons are the comparatively recent advent of the railroad, the mineral discoveries in the North and the steady trend of new population to the Western provinces. The stream of immigration which has flowed for many years into the West has resulted largely from railroad building and from extensive and judicious advertising. The provincial Governments of Manitoba, Saskatchewan and Alberta have pursued a vigorous policy in attracting settlers to their country. The Dominion Government has largely assisted. The Ontario authorities have done much, but apparently only a small proportion of the work they must do to turn part of the immigration stream from the West to the North. In this connection the Dominion Government, perhaps, owe a duty to Ontario and might give greater assistance to the colonization of the Northland.

Neglect has been General.

While the Ontario business men and manufacturers have so largely benefited from the crop records and purchasing power of Western Canada, they have to some extent neglected the prospects of a country distant only hundreds, instead of thousands, of miles from their factories. The neglect has not been theirs only. It has been common to governments, capitalists, business men and industrial captains.

The captains of industry in Winnipeg have promoted the agricultural interests of the three Western provinces, knowing that every new settler in the West must buy food, clothing, farm implements and general supplies. The Winnipeg business men have for several years hired a special train, calling on their customers in the leading Western towns and cities. This train carried members of houses representing many millions of capital. The head of a firm does not usually take a two weeks' jaunt, such as this, without seeing dividends ahead. The trip of the Toronto Board of Trade in June to Northern Ontario was along similar lines, and gave at least an impression of the trade prospects there which will follow agricultural development.

FLOW OF IMMIGRATION.

Since 1900 Canada has received through the medium of immigration 1,764,475 new population. The following table, compiled by the Department of the Interior at Ottawa, shows the destination by provinces of these newcomers who arrived between July 1st, 1900, and March 31st, 1911:—

Year.	Maritime Provinces.	Quebec.	Ontario.	Manitoba.	Saskatchewan.	Alberta.	British Columbia and Yukon.	Not Shown.	Totals
1900-1901	2,144	10,216	6,208	11,254	14,160		2,600	2,567	49,149
1901-1902	2,312	8,817	9,789	17,422	22,199		3,483	3,348	67,379
1902-1903	5,821	17 040	14,854	39,535	43,898		5,378	1,838	128,364
1903-1904	5,448	20,222	21,266	34,911	40,397		6,994	1,093	130,331
1904-1905	4,128	23,666	35,811	35,387	39,289		6,008	1,977	146,266
1905-1906	6,381	25,212	52,746	35,648	28,728	26,177	12,406	1,766	189,064
*1906-1907	6,510	18,319	32,654	20,273	15,307	17,559	13,650	395	124,667
1907-1908	10,360	44,157	75,133	39,789	30,590	31,477	30,768	195	262,469
1908-1909	6,517	19,733	29,265	19,702	22,146	27,651	21,862	32	146,908
1909-1910	10,644	28,524	46,129	21,049	29,218	42,509	30,721	....	208,794
1910-1911	13,237	42,914	80,034	34,653	40,763	44,794	54,689	....	311,084
Totals...	73,502	258,820	403,898	309,623	516,862		188,559	13,211	1,764,475

ONTARIO'S SHARE OF NEWCOMERS.

Of the total 1,764,475, Ontario obtained 403,898, while Manitoba, Saskatchewan and Alberta received between them 826,485, or more than double Ontario's share. While the West will attract considerable new population for a number of years, there is no just reason why Northern Ontario should not obtain a considerably greater portion of the newcomers to Canada. If the figures err at all, they give Ontario more immigrants than that province actually obtained. Many whose final destination was apparently Ontario, later went to the West. A more aggressive policy should be undertaken in Eastern Canada not only to retain the present farming population, but to obtain a larger proportion of the new immigration.

QUESTION OF ADMINISTRATION.

The question has been raised by some as to whether the present methods adopted by the Provincial Government are sufficiently concentrated to obtain the best results in colonizing the North. If money is needed for that work, appeal is made to the provincial treasurer. Railroad questions are dealt with by the Government Railway Commission and road building by another department. Immigration and colonization are handled by yet another authority. The suggestion that a representative commission or department be appointed to deal exclusively with all matters connected with the settlement of the Northland is one which has merit. Every official connected with this work in the various separate departments is doing his best in the shape of individual or departmental effort. The lacking appears to be in collective endeavor. A commission, with a single object in view and

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* Nine months.

with authority to handle all matters connected with that object, might easily prove an excellent medium in paving the way as far as possible for the settler in the matter of roads and similar undertakings and diverting the stream of immigration to some extent to Northern Ontario.

To advertise extensively the truth respecting the excellent agricultural conditions in Northern Ontario is another way to attain this end.

VETERAN CLAIMS RETARDING DEVELOPMENT.

In Northern Ontario, as elsewhere, grants of land have been made to war veterans as a reward for their military services. In many cases the veterans have failed to utilize their lands for farming purposes, and they have fallen into the hands of speculators. Instead of being tilled, they are being held for high prices. This prevents the *bona fide* settler from taking up the land unless he pays heavily for it. At the same time the Government are unable to build roads through the veteran claims held for speculative purposes. In this connection a correspondent suggests the following:

(1) Opening of roads by the Government along the border of veteran claims.

(2) The forcing of those holding land in this way for speculative purposes either to cut roads along their holdings or allow the Government to do so, taxing the cost of same to the holders.

In dealing with the question of these co-called veterans' claims, it may be necessary for the Provincial Government to pass special legislation. Immediately the lands granted to veterans pass from them to a speculator, the real object of the grant no longer holds good, and there seems to be little reason against the taking of drastic action in this matter in order that the settlement of the Northern country should not be retarded.

The obtention of immigrants has a vital bearing on the purchasing power of a country and the consequent quickening of business conditions. In my book, "Capital Investments in Canada," I have estimated the amount of new capital which the 1,764,475 newcomers brought into Canada during the past eleven years. After consultation with several authorities, it was decided that a fair estimate of the value of the settlers' effects entering the Dominion with each American immigrant is $350 per head, with a cash allowance to each new citizen from the United States of $500.

CASH AND SETTLERS' EFFECTS.

Neither the cash assets nor the effects of British immigrants are as large, taking the average, as those of the United States immigrant. A reasonable estimate is that every British immigrant brings into

Canada with him $100 cash and settlers' effects to the value of $50 per head. From continental Europe the amount is smaller, but would be at least $10 per head, with few settlers' effects valued at the small sum of, say, $5 per capita. The volume of immigration under review has, therefore, given Canada new capital of at least $636,272,080, as shown in the following table:—

Number.	Nationality.	Property.	Per Head.	Total.
685,067	British	Cash	$100	$ 68,506,700
685,067	British	Settlers' effects	50	34,253,350
619,546	United States	Cash	500	309,773,000
619,546	United States	Settlers' effects	350	216,841,100
459,862	Continental	Cash	10	4,598,620
459,862	Continental	Settlers' effects	5	2,299,310
				$636,272,080

The number of farm implements being shipped into Northern Ontario indicates the faith and prosperity of the men who are already there. From January, 1909, to March, 1911, the Government railroad has carried 3,178 farm implements, with an estimated value of $156,792, into the North country which it serves. These were of a large variety, and showing as they do the progress of an agricultural country scarcely "scratched," a list is tabulated in Appendix V.

GOVERNMENT LAND POLICY.

Where the townships contain rough lands and only a small percentage of good land, the Ontario Government has provided that before a township is opened for settlement, it must be inspected by a competent officer to ascertain: (a) the percentage of good land in it; (b) the quantities and varieties of timber; (c) whether it is chiefly valuable for its mines and minerals. If the inspection shows it to contain less than 40 per cent. of good land, the policy of the Government is to keep it closed from settlement for the growing of timber, or, if it has large quantities of pine, to keep it closed until the pine timber has been removed, or, if it is valuable chiefly for its mines and minerals, to exclude all settlement.

It was found that, in townships already opened, people took up rough lands for the purpose of obtaining possession of the timber, under the cloak of farming. By this practice, lands were withdrawn from the operation of timber license, so far as timber other than pine was concerned, to the injury of the licensee, and without benefit to the Crown.

All lands applied for are now inspected, and if the inspection shows less than 50 per cent. of agricultural land in the area desired to be located, the application is not granted, the land being left in forest.

The desire is to keep the lands of the Crown for the use for which they are best adapted.

A list of lands in Northern Ontario which are open for sale and the conditions upon which they are granted to settlers, is given in Appendix VI.

IX.

RAILROAD GROWTH AND FACILITIES.

Three of the leading factors in the rapid upbuilding of Canada in the past few decades have been capital, immigration and railroad construction. The increase in railroad mileage has proved, perhaps, the most valuable, in a pioneering sense. In 1836 we had 16 miles of railroad in operation. To-day we have more than 24,000 miles. This is an increase in 74 years of 156,000 per cent. It represents not only railroad but also national expansion. According to statistics compiled by Mr. A. W. Campbell, Deputy Minister, Department of Railways and Canals, at Ottawa, Ontario had at the end of 1910 8,230 miles of track. The railway mileage for 1910 was distributed by provinces as follows:—

Province.	Miles.
Ontario	8,230.25
Quebec	3,794.94
Manitoba	3,220.62
Saskatchewan	2,931.90
Alberta	1,488.42
British Columbia	1,832.28
New Brunswick	1,521.65
Nova Scotia	1,350.56
Prince Edward Island	269.33
Yukon	90.91
TOTAL	24,730.86

The 1911 figures are included in Appendix XI.

ONE-THIRD OF CANADA'S MILEAGE.

Ontario thus has almost one-third of the total mileage of the Dominion, more than double that of Quebec and more than 589 miles more than the aggregate mileage amounting to 7,640.94 of the three prairie provinces. The growth of railway mileage by provinces during the past two years is shown in the following table:—

	1909.	1910.
Ontario	8,229	8,230
Quebec	3,663	3,795
Manitoba	3,205	3,221
Saskatchewan	2,631	2,931

	1909.	1910.
Alberta	1,321	1,488
British Columbia	1,796	1,832
New Brunswick	1,547	1,522
Nova Scotia	1,351	1,351
Prince Edward Island	269	269
Yukon	91	91

Even with the considerable railroad construction proceeding in Western Canada, Ontario still showed a gain in mileage over 1909. Saskatchewan, which exhibits the largest increase, was the centre of railroad work in 1910.

GOVERNMENT ROAD WAS FIRST.

The first line to be completed in Northern Ontario was the Government road, with a mileage from North Bay to Cochrane of 252 miles, with branch lines of 13 miles and yards and sidings of 75 miles, a total mileage of 340. The road was created as a medium of colonization. In certain respects it has more than achieved that aim, while in others some consider it fallen short Operations were commenced by the railway in 1905, and a good balance-sheet has been exhibited by the railway commissioners at the end of every year.

MINERALS AND A POLICY.

The discovery of rich minerals created population, new towns and also traffic for the railway In that way chiefly it has opened up the country. In reality, the road was built into the North not so much for the passenger traffic and freight resulting from mining, but more to carry settlers and their effects into the agricultural regions, bringing back their products. In this direction it is doubtful whether the railway commissioners have accomplished all they anticipated in planning their enterprise. The situation is not entirely of their making. The mining discoveries, as a matter of business, naturally deflected part of their attention from the important question of the settlement of agricultural lands. Now that the transportation necessities of mining men are to a large extent satisfied, the railway commissioners and the Ontario Government will probably consider plans for the attraction of farmers to the rich Northern lands. The railroad is an important factor, as freight rates on settlers' effects and general supplies and on the products of the farm are vital considerations for the man who is choosing a location either in Western Canada or in the North. Differences in rates often govern his decision.

TO JAMES BAY.

The Temiskaming and Northern Ontario Railway connects with the Canadian Pacific and Grand Trunk Railways at North Bay. The terminus of the Government road is at Cochrane, the distance from that town to Toronto being 480 miles. The natural terminus of the Government road is at James Bay, 175 miles from Cochrane. The railway commissioners sent a party this summer to explore the Moose River country, sloping from the height of land to James Bay. A special examination was made of the physical features of the shores of the bay, and a suitable location sought for a harbor. The navigation possibilities of James Bay are somewhat questionable. There is a certain value in the fisheries there, while the well-watered and wooded land through which an extension of the Temiskaming Railroad would run, together with the estimated water powers on the Northern slope of 2,030,600 horse-power, would probably appeal as justification for the extension of the railway. If a suitable location is not found at James Bay, there may be a port available on the Hudson Bay.

It is interesting to examine the progress of the Temiskaming and Northern Ontario Railway since it started operations in 1905. The following table gives some idea of this:—

Number of	1905	1910.	Increase per cent.
Passengers carried	86,648	670,913	674
Tons of freight carried	99.192	624,820	540
Miles made by:			
Passenger trains	45,538	375,023	723
Freight trains	21,080	332,746	1,478
Mixed trains	52,197	nil	..
Passenger cars	258,715	1,984,435	667
Freight cars	873,689	5,116,130	600

EARNINGS PER MILE.

The mixed train service was discontinued when separate freight and passenger trains were inaugurated. The increase of 540 per cent. in the number of freight tons carried and 674 per cent. in the number of passengers in the five-year period are indications of the growth in traffic. The earnings of the road in 1905 were $253,720 and last year $1,591,852, a gain of 527 per cent. The expenses were $139,772 and $1.165,361 in the two years respectively, being an increase of 733 per cent. The earnings per mile of road increased from $2,245 in 1905 to $6,122 in 1910, a gain of 172 per cent.

STRONG FINANCIAL POSITION.

The financial position of the road is of some importance in connection with the question as to how far the railroad should sacrifice its immediate interests in order to colonize the Northern agricultural lands with comparative rapidity. The general balance-sheet of the

Railway Commission for the year ended October 31st, 1910, shows a free surplus of $238,176, while $420,000 is shown in the profit and loss account as having been paid to the Treasurer of Ontario. From the ninth annual report of the Temiskaming and Northern Ontario Railway Commission is taken the following condensed statement of revenue account for the year 1910 compared with 1909:—

	1909.	1910.
Revenue from transportation......	$1,489,153.93	$1,522,020.05
Revenue other than transportation.	80,541.36	69,831.97
Total operating revenue......	$1,569.695.29	$1,591,852.02
Operating expenses*..............	925,590.65	1.165,361.36
Net operating revenue........	$ 644,095.64	$ 426,490.66
Ore royalties....................	193,032.68	31,762.92
	$ 837,128.32	$ 458,253.58
Hire of equipment, etc...........	25,609.97	22,123.27
Total earnings...............	$ 831,518.35	$ 436.130.31
Paid Treasurer of Ontario........	$ 550,000.00	$ 420,000.00

FINANCIAL AND COLONIZATION RESULTS.

The Government railroad was, therefore, able to pay to the Provincial Treasurer $550,000 in 1909 and $420,000 in 1910, almost $1,000,000 in the two years. This is probably one of the best results ever achieved on a Government-owned and colonization road. On the other hand, the good financial results are to some extent counteracted by the comparatively small settlement of the agricultural lands for the peopling of which the road was primarily built.

It will be interesting to examine what constitutes the freight carried by the Government railway into and from the North. The following classified statement for the year ended December 31st, 1910, gives these details:—

Commodities.	No. of Tons.
Agricultural implements................	4,058
Butter, cheese and eggs.................	652
Cement, brick and lime.................	18,909
Coal (anthracite)......................	13,180
Coal (bituminous)........	136,570
Cordwood, slabs and edgings............	1,465

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*The operating expenses amount to 73.2 per cent. of the gross earnings, and the net earnings to 26.8 per cent. as compared with 58.9 per cent. and 41.1 per cent., respectively, for the twelve months ended October 31st, 1909.

Commodities.	No. of Tons.
Flour	5,931
Forest products (other)	22,125
Fruits and vegetables	2,476
Grain	9,140
Hay	11,151
Iron and steel	3,955
Iron pyrites and minerals	3,328
Household goods and furniture	2,025
Laths and shingles	521
Live stock	7,689
Logs	90,193
Lumber	61,652
Manufactured goods	33,218
Merchandise	12,868
Meats (dressed)	5,135
Mill feed	837
Oils	4,304
Ore (silver)	39,748
Ore (other)	4,463
Potatoes	4,734
Pulpwood	39,491
Rails (steel)	7,704
Railway equipment	8,825
Sand and gravel	5,676
Settlers' effects	2,084
Timber (square)	662
Wines, liquors and beers	4,075
All others	7,462
TOTAL	576,306

The chief commodities shipped from Northern Ontario were minerals, lumber, pulpwood and other forest products. The most notable shipments into the country were 4,058 tons of agricultural implements and 2,084 tons of settlers' effects. Coal was the heaviest item, aggregating 149,750 tons.

COCHRANE, A RAILROAD CENTRE.

At Cochrane the Temiskaming Railway meets the National Transcontinental, which will be within a comparatively short time handed over to the Grand Trunk Pacific for operation. By reason of its railroad connections alone, Cochrane will undoubtedly become an important centre.

The total mileage of the National Transcontinental is 1,805. Of the 1,805 miles of the Transcontinental, the road which caps the Temiskaming Railway in a rough T shape and also runs through the clay belt, 700 miles of main line and siding had been completed on November 30th, 1909. At the end of May, 1911, the National Transcontinental was completed for [illegible]s east of Cochrane and 130 miles west of the town. Last summer witnessed considerable progress in the construction of the Grand Trunk Pacific in the mountain section.

THE GRAND TRUNK PACIFIC.

The new Transcontinental should be completed within the next two or at least three years. It will be practically level from ocean to ocean, the average gradient being 4-10 of 1 per cent. On completion, the Grand Trunk Pacific will take over the Eastern section, which runs in part through Northern Ontario, from the Dominion Government, and will operate it for the first seven years at cost and for the remainder of the period at a rental of 3 per cent. on the cost of construction.

The completed Grand Trunk Pacific Railway will be made up as follows:—

	Miles.
Moncton to Winnipeg (National Transcontinental, under construction)	1,805
Winnipeg to Edmonton (constructed)	793
Edmonton to Prince Rupert (part constructed)	962
	3,560

Whether the Temiskaming Railroad will ever become a part of the Grand Trunk is a question of time and for the consideration of Sir James Whitney, Mr. Charles M. Hays and the people of Northern Ontario. The Grand Trunk Pacific has been granted running rights over the Government road

A THOUSAND-MILE LINK.

In addition to the railroad facilities provided by these two lines, the Canadian Northern Railway obtained a bond guarantee from the Dominion Government in May for a thousand mile link of that road from Port Arthur to Montreal, via Sudbury and the Ottawa Valley. With the completion of the Grand Trunk Pacific, the new line of the Canadian Northern will give practically all Eastern Ontario points three competing lines to the West, in addition to opening up an additional large stretch of rich agricultural territory in Northern Ontario and the Ottawa Valley. The Canadian Northern link will run through the clay belt at distances varying from 20 to 50 miles from the line of the National Transcontinental Railway.

FROM A HIGH AUTHORITY.

In speaking of the proposed bond guarantee of the Canadian Northern Railway in this connection, Hon. Mr. Graham, former Minister of Railways, paid a deserved compliment to the Northland, saying:—

> "Before the proposed road reaches North Bay, and in that vicinity, it will traverse the southern portion of what is known as the clay belt of Ontario. Let me say that there is as much good land in Ontario that has never been cultivated as there is in that province now under cultivation. In all the discussion of opening up new territory, we from Ontario have a deep interest in seeing that this uncultivated part of our province is brought under the plough. The Grand Trunk Pacific runs through the northern portion of it. The Canadian Northern will run more towards the southern border of this belt. The Canadian Pacific Railway practically does not touch it at all. Coming eastward from Port Arthur, except, for a few miles, the Canadian Northern will serve an absolutely new country from that now served by either the Canadian Pacific Railway or the Grand Trunk Pacific. Except in one or two instances, this new line will not come nearer than twenty miles to any of the existing roads, and in many places it will be from 60 to 75 miles from the Grand Trunk and from 20 to 40 miles from the Canadian Pacific Railway. Coming eastward and passing North Bay, the road will proceed down through the province of Ontario, opening up a new country until it strikes the county of Renfrew."

MAY BE ANOTHER LINE.

A further addition may be made to the growing network of railway steel if the plans of American capitalists, who were reported to have purchased the Bruce Mines and Algoma Railway in June, are carried out. They then contemplated the extension of this road, now built from Bruce Mines to Rock Lake, to connect with the Grand Trunk Pacific, a distance of 350 miles. If the road is so extended, it will intersect the Soo branch of the Canadian Pacific, the main line of the same road at Ridout, and the Canadian Northern, now under construction, and connect with the Grand Trunk Pacific one hundred miles west of Cochrane. After the road crosses the Canadian Pacific main line it enters the clay belt.

The Nipissing Central Electric Railway, which was recently acquired by the Temiskaming and Northern Ontario Road, connects Haileybury, Cobalt and North Cobalt and will be extended.

The railroad situation in the North is, therefore, good, actual operation and construction being well advanced and the outlook for projected schemes bright. There are sufficient railroad facilities at present to warrant the settlement of the Northern agricultural lands by a new farming population of considerable size

X.

RAILROAD FREIGHT RATES.

The rates charged by transportation interests for the carriage of freight have always been the subject of criticism. The Government railway from North Bay to Cochrane is no exception. The rates on this road have been complained of, but in many cases an investigation of the facts has shown the complaint to have been based on misapprehension of this phase of railroad operation. The question of freight rates on a Government colonization road is of the greatest importance, chiefly in reference to the carriage of settlers and their effects into the North country, and in regard to the transportation of raw materials from the North to factories elsewhere and *vice versa*.

In the case of settlers, a low rate is given for passengers and for effects. Both the Canadian Pacific and Grand Trunk Railways have in effect a tariff on settlers' effects, carloads and less, in conjunction with the Temiskaming and Northern Ontario Railway to stations on that line. Among the rules and conditions governing such shipments the following two indicate the meaning of "effects," according to the tariff.

(2) Carloads of settlers' effects, within the meaning of this tariff, may be made up of the following described property for the benefit of actual settlers, viz.: Live stock, any number up to but not exceeding ten (10) head all told, viz., Cattle, calves, sheep, hogs, mules or horses; household goods and personal property (second-hand); waggons or other vehicles (will not apply on automobiles, omnibuses, hearses or similar vehicles) for personal use (second-hand); farm machinery, implements and tools (all second-hand); softwood lumber (pine, hemlock, basswood or spruce, only), and shingles, which must not exceed 2,000 feet in all, or the equivalent thereof; or in lieu of, not in addition to the lumber and shingles, a portable house may be shipped; seed grain; small quantity of trees or shrubbery; small lot live poultry or pet animals; sufficient food for the live stock while on the journey. Settlers' effects rates, however, will not apply on shipments of second-hand waggons, buggies, farm machinery, implements or tools, unless accompanied by household goods.

(3) Merchandise, such as groceries, provisions, hardware, etc., also implements, machinery, vehicles, etc., if new, will not be regarded as settlers' effects, and if shipped, must be charged the regular class tariff rates. While the Canadian Pacific Railway is desirous of continuing to give liberal encouragement to settlers, both as to the variety of the effects which may be loaded in cars, and the low rates thereon it is also the duty of the Company to protect merchants by preventing, as far as possible, the loading of merchandise of a general character in cars with personal effects. Agents, both at loading and delivering stations, must personally satisfy

themselves that contraband articles are not loaded, and see that actual weight is charged for when carloads exceed 20,000 lbs.

Abuse of the rates on settlers' effects has occurred, other than *bona fide* settlers having made use of the low rates. Figures, too, which might at first appear high for the shipment of various commodities, are to some extent minimized by the argument noted above that local merchants and their business should be protected and encouraged to some extent.

The minimum carload weight is 20,000 lbs. The minimum charge for less than carload shipments is 100 lbs. at regular first-class rate. Less than carload shipments are understood to mean only household goods (second-hand), waggons or other vehicles (second-hand), for personal use and second-hand farm machinery, implements and tools. The rates on settlers' effects, however, do not apply on shipments of second-hand waggons, buggies, farm machinery, implements or tools unless accompanied by household goods. The entire rules and conditions of these shipments appear to be governed by the desire to assist the settler, to prevent abuse of the low rates and to give proper protection to the local merchant.

A correspondent notes the following handicap in the settlement of the territory served by the Government railway. He writes:

> "The same rate is charged on a car of settlers' effects from Renfrew to Cochrane, a distance of 427 miles as from Renfrew to Winnipeg, a distance of 1,229 miles, nearly three times as great. This is because the Canadian Pacific Railway, with which the freight originates does not give the same proportionate rate to the Temiskaming and Northern Ontario connection that it gives over its own line to Winnipeg"

This matter perhaps might have the attention of the Canadian Pacific Railway or the Dominion Railway Commission.

Examples of assistance given to settlers by the Government railway in connection with shipments are numerous. For instance, a settler was loading hay on the train. His hay was not pressed solidly enough to make one carload. The Government railway gave him two cars, charging him only for one. Again, the Government railway is willing to stop a car at any point on its line for the settler to ship his lumber, or other commodity, and will help him to load should his assistance be insufficient. It is doubtful whether a private corporation would make these concessions or, in some cases, be justified in doing so. This encouragement, however, to the settler by the Provincial Government railyway should remain a part of the policy and appears to be thoroughly justified.

The freight rates for settlers' effects from points Montreal and Western Quebec and from practically all points in Ontario to Temiskaming and Northern Ontario Railway points, may be tabulated as follows:—

		Cents per 100 lbs.	
Points Noted Above to	Miles from North Bay.	Carloads Minimum 20,000 lbs.	Less than Carloads
Haileybury	108	20	40
Liskeard	113	20	40
Uno Park	124	21½	42½
Thornloe	124	21½	43
Earlton	128	21½	43½
Heaslip	134	22	44
Englehart	138		
Chamberlain	140		
Wawbewawa	141	23½	48
Krugerdorf	143		
Dane	159		
Swastika	164		
Kenogami	168	[illegible]½	50
Sesekinika	175		
Bourkes	183		
Raymore	195		
Belleek	202	25½	52
Matheson	205		
Nushka	215		
Monteith	218	26	53
Kelso	222		
Iroquois Falls	225		
Holland	237	26½	54
Wicklow	248	27	55
Cochrane	253		55
Charlton	144	23½	48

From east of Montreal to Megantic, the rates are 5 cents in carload lots and 10 cents less than carload lots over the rates tabulated above. From east of Megantic to Portland, Me., the rates are 10 cents in carload lots and 20 cents less than carload lots over the tabulated rates as above.

Charlton is on a branch line and eight miles from Englehart. The Swastika rate applies to less than carloads only. Several of the above are prepaid stations. It will be seen that the rate per 100 lbs. on carload lots varies only 7 cents and the rate on less than carloads 15 cents in the total distance of the main line, 253 miles.

The passenger tariff for settlers is on the same basis on the Temiskaming and Northern Ontario, the Canadian Pacific and Grand Trunk Railways. A few figures taken from the tariffs illustrate this point:—

C. P. R. & G. T. R.			T. & N. O. Railway Rates.		
Where One-way Distance via Route Travelled is Miles.	One-way Second-class Fare will be	Round Trip Second-class Fare will be	Town and Miles from North Bay.	One-way Second-class.	Round Trip Second-class.
108	$1.80	$2.70	Haileybury, 107	$1.80	$2.70
111	1.85	2.80	New Liskeard, 112	1.90	2.85
204	3.40	5.10	Matheson, 205	3.45	5.20
252	4.20	6.30	Cochrane, 253	4.20	6.30

The suggestion is heard in some quarters that in view of the great desirability of rapid settlement in Northern Ontario, the rates for settlers and their effects might undergo a reduction on the Government railroad.

With regard to the shipment of ore on the Temiskaming Railroad, the rates appear to be in some cases comparatively higher than on the roads which take the ore from the Government road at North Bay. The following table will illustrate this:—

Points of Shipment.	Miles.	Carload Lots per 100 lbs. Low Grade Ore value $1.00 to $49.00.	Carload Lots per 100 lbs. High Grade Ore value $200 to $2,000.
Cobalt to North Bay...	103	10c.	16c.
North Bay to Buffalo..	...	12½c.	24½c.
Buffalo to New York...	...	13c.	22c.
		35½c.	62½c.

The comparatively higher rates on the Government road are subject to several considerations. From North Bay it will be seen the rates apply to American points. The tariff principle gives the road on which the freight originates, a proportionately higher rate. Certain concessions are made by the Northern Ontario Railway For example, the ore from the Kerr Lake section is hauled for a distance of about one mile at the "switching" charge of 1 cent per 100 lbs.

The following table, applying to Canadian points only, shows the Temiskaming Railway rates to better advantage:

Points of Shipment.	Miles.	Carload Lots per 100 lbs. Low Grade Ore value $1.00 to $49.00	Carload Lots per 100 lbs. High Grade Ore value $200 to $2,000.
Cobalt to North Bay...	103	10c.	16c.
North Bay to Orillia...	140	11c.	21c.
North Bay to Thoro'd	301	14c.	26c.
North Bay to Toronto..	226	12c.	24c.

If the ore shipped from Northern Ontario by the Temiskaming Railroad is to be treated in Canada that road gives a rate of 14 cents. The 16 cent rate applies to ore shipped from the North and treated outside of Canada

Had the Temiskaming and Northern Ontario Railway adopted the sliding scale of rates on silver ore based on valuation, as was done by the other roads in 1908, it would have meant that all ore going to Canadian smelters over the Government road would be subject to a rate of 26 cents instead of the 14 cent rate as at present. While the Temiskaming Railway is getting 14 cents for the carrying of high grade ore, the other roads obtain 19 cents for ore valued at from $100 to $500 and 24 cents for ore valued at over $500.

In considering freight rates one of their basic principles must not be overlooked. There is a standard freight mileage tariff on which all the roads base their rates. This is divided into 10 classes. As an example we may take class 7, which includes silver ore. The rate per 100 lbs. for a distance over 100 and under 110 miles is 14 cents The rate over 200 and under 210 miles is 18 cents. Thus although the mileage is doubled the rate is increased only 4 cents, from 14 cents to 18 cents per 100 lbs. Again doubling the mileage and taking the rate over 400 miles and under 425, the rate per 100 lbs. is 25 cents. So that there is an increase from 18 cents of only 7 cents in the rate, although the mileage has increased from 200 to 400. The principle is defined presumably to pay the initial cost of running a train. There is consequently not such a large difference, as might at first glance be anticipated, in the rates on short and long hauls.

In various commodities, it appears that the rates on the Government road are lower than on the other roads, although the schedule of the latter is the standard one and apparently reasonable. Two examples will be sufficient:—

Commodity.	Carrier.	Shipment Points.	Miles.	Rate.
Coal....	C.P.R......	North Bay to Sudbury...	80	$1.10 per ton.
Coal....	T. & N.O.	North Bay to Liskeard...	113	.80 per ton.
Lumber.	G.T.R....	North Bay to Toronto....	227	.10½ per 100 lbs.
Lumber.	T. & N.O. G.T.R... or C.P.R..	Liskeard to Toronto......	340	.12½ per 100 lbs.

The rate on lumber from Liskeard to Toronto is only 2½ cents over the rate from North Bay to Toronto. This applies similarly to Grand Trunk points and points on the Canadian Pacific Railway, Fort William and east. This advantageous arrangement is made possible through an agreement between the various roads interested.

The Government railway rates, so far as the writer can judge, are in no case higher than those of their connections and in some cases, as shown in Commodity Tariff No. 13, the rates are lower.

On the other hand, it should be noted that the rates in the territory served by various railways south of the Ottawa River and east of North Bay, were recently reduced by approximately 25 per cent. on freight included in what is known as Schedule A. North of North Bay, on the Government railroad the old basis of rates is still in operation.

While a larger number of complaints respecting the freight rate charges on the Temiskaming and Northern Ontario Railway are heard, many of them are loosely constructed and without foundation. But if grievances in this direction exist—the railway commissioners and the freight senders are those who actually know—it is for the parties interested to discuss the matter as business men, all desirous of developing Northern Ontario.

XI.

TRADE PROSPECTS.

The trade opportunities arising from the conditions briefly described in the preceding pages are numerous and extensive. Not only is the obtention of the present business in Northern Ontario important, but also the fostering of future and the creation of new business. The total imports into Ontario during the fiscal year ended March 31st, 1910, were valued at $171,000,000, compared with imports into Quebec of $128,737,000. The following figures, showing the value of exports and imports to Canada by provinces during that year, are useful in considering the more confined area of the North:

Province.	Total Exports.	Total Imports.
Ontario	$ 90,287,469	$171,026,114
Quebec	126,378,646	128,737,565
Nova Scotia	19,557,188	14,735,916
New Brunswick	32,110,811	10,829,366
Manitoba	4,192,922	25,703,523
British Columbia	25,068,411	27,091,019
Prince Edward Island	441,836	653,544
Alberta	161,190	5,948,225
Saskatchewan	2,912,477	6,125,912
Yukon	247,579	952,152
	$301,358,529	$391,803,336

ENTERED FOR CONSUMPTION.

Quebec's exports were $36,000,000 larger than those of Ontario. The pulp and paper industry of that province and the position of the port of Montreal undoubtedly contributed to the figures. Of Ontario's total imports, $168,659,000 were entered for consumption in that province, and in the case of Quebec $115,518,000. Some of these imports, together with considerable merchandise of home production, were shipped from Toronto and other Ontario cities to the Northern part of the province,

A LARGE BUYING AREA.

Unfortunately, too large a proportion of the Old Ontario business houses have apparently failed to realize the importance of the Northern market and its rapidly increasing purchasing power. In the Cobalt silver mines and their allied industries alone wages were paid in 1909 aggregating $3,454,242. The wages paid in 1910 to employees engaged in the mines and mineral works of Ontario totalled $10,532,257, a large part of which was earned and spent in the North. While it is impossible to state the exact purchasing power of this expanding country, an estimate can be formed which will give an idea of the money being expended there. The buying along the line of the Temiskaming railroad from North Bay to Cochrane and its contiguous territory can be roughly divided into four classes—towns, mining regions, farming districts, lumber and railroad camps. These districts, with their population, may be tabulated as follows:—

Towns.	Individuals.	
Cobalt	10,500	
North Cobalt	1,100	
Haileybury	5,031	
New Liskeard	3,700	
Latchford	500	
Englehart	815	
Matheson	600	
Cochrane	2,500	
		24,746
Mining Regions.	Individuals.	
Cobalt district	5,000	
Porcupine	12,000	
Gowganda and Elk Lake	2,000	
Swastika	300	
Larder Lake	150	
Munroe	2,000	
Unreported	500	
		21,950
Farming Districts.	Families.	
Liskeard	2,165	
Englehart	1,500	
Matheson	145	
Cochrane	500	
		4,310
Lumber and railroad camps	Individuals.	1,000
TOTAL	......	52,006

CLASSES OF BUYERS.

In estimating the purchasing power of these classes, several factors must be considered. The mining man, for instance, including the mine worker, manager and mining prospector, spends weekly, on the average, probably twice the amount expended by the agricultural family. He is comparatively extravagant and expends much money in the neighborhood in which it is earned. The estimate, therefore, of $20 as his weekly purchasing power is low.

The following freight was among that shipped into Cobalt in 1910:—

Freight.	Tons.
Meats, vegetables, etc	57,000
General merchandise, groceries, etc	53,000
Mining and other supplies	45,000
Lumber	60,000
Coal	170,000
TOTAL	395,000

In the case of families engaged in agricultural pursuits $12 per family would not be an over-estimate, especially when one takes into consideration the purchases of farm implements. An average weekly purchasing power per capita of $15 would not be high for the lumber and railroad camps.

In the case of the railroad camps, the wage earners are often at a distance from a town for comparatively long periods. The effect of their absence on trade is only temporary. When they return to the store area large sums of money are invariably circulated, bringing the average weekly purchasing power well up to and beyond $15. The amount in the case of towns—viz., $15—is also low.

HEAVY PURCHASING POWER.

By taking estimates, which are probably lower than the actual figures, and taking a moderate estimate of population, it is possible to gain a general idea of purchasing power, without the danger of over-estimating. The result, showing the weekly purchasing power of the settled region from North Bay to Cochrane, may, therefore, be tabulated as follows:—

Purchasing Area.	Population.	Weekly Purchasing power per Capita.	Aggregate Weekly Purchasing Power.
Towns	24,746	$15	$371,190
Mining regions	21,950	20	439,000
Farming districts	4,310	12*	51,720
Lumber and railroad camps	1,000	15	15,000
TOTAL	52,006	$72	$876,910

ANNUAL PURCHASING POWER.

On this basis the annual purchasing power of the settled portion of Northern Ontario is at the least $45,599,320.

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* Per family.

In this connection, it is notable that the goods purchased in the North are of the best quality. The present market is, therefore, of some value to the factory and distributing warehouse in Old Ontario. In travelling through this new country one notices that a fair amount of trade is already being done by Ontario. Blankets are shipped from Ottawa and Lanark; groceries, hardware and meats from Toronto and Hamilton; fresh vegetables and fruit from Niagara, through Toronto firms; clothing, drugs, tents and awnings from Toronto; canoes and pack sacks from Peterboro.

QUEBEC IS TAKING BUSINESS.

On the other hand, much trade is going to Quebec Province, and it seems beyond dispute that business houses in that province are catering to and fostering the trade of Northern Ontario to a far greater extent than is Old Ontario. This is one of the most serious considerations for the Ontario industrial captain. One correspondent tells me that in his town 65 per cent. of the hardware trade has gone to Quebec points, and about 50 per cent. of the dry goods, gentlemen's furnishing and shoes in the same direction. In the grocery trade Quebec obtained only a small percentage. Among the reasons given for this situation is the fact that Northern Ontario merchants commenced buying from Montreal, and were not approached by Ontario houses with a view to changing the trend of business.

QUEBEC AND THE RAILROADS.

Many thousands of miners' and prospectors' boots are sold in the North by a Detroit firm, although Ontario houses are doing a good business. The competition of the French province is well assisted by railroad facilities, which will be improved. The distance of four cities from the town of Cochrane is shown in the following table:—

City.	Miles from Cochrane.
Toronto	480
Quebec	568
Montreal, via North Bay	613
Winnipeg	775

The present difference in distance between Cochrane and Toronto and Montreal is 133 miles in favor of Toronto. With the completion of the Grand Trunk Pacific, the distance of Cochrane to a Quebec centre will be reduced to only 88 miles in favor of Toronto. These are points which the Ontario business man cannot afford to overlook and which the Quebec houses have well in view.

EXTENT OF COMPETITION.

How far this competition has extended in two recent years is seen in the following classified statements, supplied by the Temiskaming and Northern Ontario Railway Commissioners, showing the freight traffic into Northern Ontario from Quebec and Ontario points respectively:—

Commodities.	1909. Tons.		1910. Tons.		Total.	
	Ont.	Que.	Ont.	Que.	Ont.	Que.
Agricultural implements...	348	1	405	2	753	3
Bridge material...........	985	....	4,617	....	5,602	....
Brick and lime...........	7,192	211	4,213	107	11,405	318
Butter, cheese and eggs....	714	59	581	36	1,295	95
Canned Goods...........	1,762	68	1,022	61	2,784	129
Cement.................	8,459	1,380	9.224	1,688	17,773	3,068
Explosives...............	232	680	106	766	338	1,446
Flour and feed...........	7,229	21	5,805	61	13,034	82
Fruits and Vegetables.....	3,431	143	3,230	271	6,661	414
Grain..................	7,835	8	6,981	24	14,816	32
Hardware...............	5,386	1,752	4,415	976	9,801	2.728
Hay....................	10.542	1,188	8,869	894	19.411	2,082
Laths and shingles........	1,411	....	77	....	1,488	....
Live stock...............	4,802	281	4,291	72	9,093	2,353
Locomotives.............	359	....	145	....	504	....
Lumber.................	20,578	69	19,521	23	40,099	92
Machinery...............	3,317	1,277	1,693	693	5,010	1,970
Manufactured goods......	10,092	2,098	7,164	1,584	17,256	2,682
Meats (dressed)..........	4,523	366	3,906	488	8,429	854
Merchandise............	12,766	1,534	10,543	1,550	23,309	3,084
Oils....................	3,026	31	3,707	12	6,736	44
Potatoes................	3,972	418	2,352	226	6.324	646
Rails (steel).............	34,199	101	6,762	....	40,961	101
Settlers' effects..........	2,254	152	1,597	211	3,851	363
Sugar..................	801	346	602	170	1,403	516
Spikes and fish plates.....	2,050	....	316	....	2,366	....
Tobaccos................	69	73	48	48	117	121
Wines, liquors and beer...	2,955	133	3,020	99	5,975	232
All others...............	1,522	14	1,787	27	3,309	41
Total..............	162,904	11,404	116,999	10,092	279,903	21,496

FREIGHT SHIPMENTS COMPARED.

In 1909 the freight shipped from Quebec points was 11,404 tons, compared with Ontario's 162,904 tons. In 1910 the tonnage from Quebec showed a decrease from the previous year of 1,312 tons, while the tonnage from Ontario showed a decline in the same period of no less than 45,905 tons. Whatever was the cause of the aggregate decrease in the freight shipments, Ontario bore practically the whole of the burden, Quebec managing to maintain its business almost at the same level as in the previous year.

Examining the figures of 1910, it is found that the largest shipments from Quebec province were: cement, 1,688 tons; fruits and vegetables, 271 tons; hardware, 976 tons; hay, 894; machinery, 693; manufactured goods, 1,584; merchandise, 1,550.

An Inadequate Interest.

In the case of hardware, several complaints of inadequate interest of Toronto houses in the Northern markets came to notice. While Ontario firms were unwilling to send samples for window display, unless they were purchased outright, Montreal firms granted that concession, obtaining considerable business as a result. There will likely be more competition from Quebec in fruits and vegetables. A large market place is being built at Haileybury, on the shore of Lake Temiskaming. Quebec growers will send their produce across the narrow stretch of lake for sale at this point. The increased growing of farm products in the North country itself will also prove a factor in this market. A comparatively large trade is done by Quebec province houses in manufactured goods and merchandise generally. Of the total freight shipped into the North by the two provinces in 1909 and 1910, amounting to 279,903 tons, Quebec's share was 21,496 tons.

Not Suited to Market.

The outfitting of miners, engineers and prospectors is an important item in the trade of the mining district. Several Toronto firms are catering to this to an extent. Many buyers find they can obtain in the local towns a better selection of goods adapted to the strenuous requirements of the district than can be obtained in Toronto and other Old Ontario cities. A close examination of this contention seems to reveal the fact that Ontario firms are carrying a general line of goods suitable for this particular trade, but not a line especially adapted to the requirements of Northern Ontario. This is giving business to the Northern towns themselves, and in some cases to American firms, the Toronto and other houses being the losers.

Hesitation in Expansion.

There has apparently been some hesitation on the part of business men in Ontario to extend their trade in the North because of possible and, in some cases, existing commercial dangers.

Judicious faith is a necessary business factor. Extreme caution is an advantage to the rival. Proper care in dealing with customers is part of the day's work. A Toronto wholesale firm was asked as to its trade in Northern Ontario. The reply was that, while much had been obtained in the past, little was being got there at present. "It is a precarious business in the North," said the wholesaler. "We have practically withdrawn; but we did mighty well while we were there." Since his withdrawal another firm has obtained more business. The trade was there. Someone had to take it. The man of judicious caution is piling freight into the North, while he of little faith is congratulating himself on financial losses which might have been sustained.

Elastic Business Ideas.

There are some tricky phases in the business of Northern Ontario, chiefly found, perhaps, in the facts that a part of the population is floating and temporary and that a part comes from foreign lands, where ideas of honest business are somewhat elastic. That is why the bank manager shakes his head at certain requests for credit. It accounts for the commercial traveller accepting some orders and forgetting to keep appointments with respect to others. It is the cause of small losses borne by certain Old Ontario houses. But the success of the majority is the best advocacy for better methods on the part of the minority. It is not difficult to classify Northern Ontario's customers. Generally speaking, they are good. As is the case everywhere else, there are a few exceptions.

The trouble is that some houses are apparently judging Northern trade prospects by the sins of the few rather than by the heavy obligations met by the many. The consequence is, as we have seen, that Quebec Province is not only obtaining a big share of business in this North country, but is striving strenuously for more trade and getting it.

Proportion of Northern Business.

An endeavor was made to ascertain from several large houses what proportion of their Ontario business was done in Northern Ontario five years ago and to-day. Owing to the fact that few firms classify their results so that these data are available, only two replies of value were received. In the case of a wholesale groceries firm, the proportion of the business done in the Northern territory in 1906 was 5 per cent. and in 1910 12 per cent. Another example—drugs—showed the percentage in the North in 1906 to be 3 per cent. and in 1910 8 per cent. These figures give some idea as to what has actually been accomplished.

Upbuilding of Towns.

Criticism has been heard respecting the provincial Government's policy in planning and disposing of its townsites. In 1886 the Canadian Pacific Railroad was opened, and in that year 1,448,856 persons were residents in Ontario townships. In 1908 the number had declined to 1,047,016, showing a rural decrease in Old Ontario. In those figures are included the new districts in Northern Ontario of Algoma, Manitoulin, Muskoka, Nipissing, Parry Sound, Rainy River, Sudbury and Thunder Bay. From 1886 to 1908 those eight districts increased in population from 37,163 to 159,672, as seen in the following table:—

Old Ontario	1886.	1908.
Rural	1,120,704	984,501
Urban	670,628	1,100,117
New Ontario.		
Rural	28,152	62,515
Urban	9,011	97,157
TOTAL	1,828,495	2,244,290

DECREASE IN RURAL POPULATION.

These figures show a decrease in the rural population of the older portion of the province by 136,203, and an increase in the town and city population of Northern Ontario by nearly 90,000. The difference is probably accounted for by the large number who have left Old Ontario for the farm lands of the West, while the railroad work and mining of the Northern country have created new conditions in that region and drawn away from Old Ontario a part of its population.

THE GOVERNMENT AND TOWNSITES.

The Government ownership of townsites in Northern Ontario has been criticized from the standpoint that the prices at which the Government sold the lots made it impossible for them to be resold at a profit. One correspondent has stated that under these conditions and because the provincial authorities retain a fourth part of every townsite for their own use, there was a large acreage not subject to taxation, and in consequence the towns could not sell their municipal bonds. This hardly seems in accordance with the facts, for nearly all the towns along the line of the Temiskaming and Northern Ontario Railway have been able to dispose of their municipal debentures at excellent prices and in some cases at par.

There is a restriction also that before a man can get a deed for his lot he has also to expend $500 for the erection of a building thereon. While this restriction is in existence with the object of preventing undue or unhealthy speculation, it is not found that the provincial Government have enforced it in any instance. It is only fair to state that the Railway Commission, as representing the provincial Government, have done much to encourage the growth of towns by deeding thereto lots for squares, schools, parks, etc. In fact, an examination of the actual facts shows that the Railway Commissioners have frequently acted the role of financial assistant and backer to young municipal authorities.

XII.

SUMMARY.

It will be convenient to summarize briefly the principal points of the preceding pages:—

(1) The chief resources of the Northland are 20,000,000 acres of splendid agricultural lands, large mineral deposits, an enormous aggregate in water powers, and a considerable area of valuable timber lands.

(2) The railroad mileage, finished and under construction, is sufficient to induce a large agricultural settlement. The outlook for further railroad construction is good. With the completion of the Grand Trunk Pacific and the proposed Canadian Northern Port Arthur to Montreal branch, the railroad steel will run through the northern and the southern borders of the great clay belt, while the Ontario Government railroad connects Toronto and Old Ontario with these developments.

(3) With the continued production of silver in the Cobalt region, there appears to be an opening for a local smelting industry which would be largely assisted by the adequate water powers in the immediate neighborhood.

(4) The timber wealth of Northern Ontario is the basis of new industrial development. Not only have the total exports of pulp and paper by the United States decreased, but the imports into that country have largely increased and notably those from Canada. The possibilities of pulp and paper manufacture in the north are such as would seem to demand aggressive action with a view to exploiting the timber resources in that direction.

(5) In view of these considerations, the provincial regulation prohibiting the export of spruce and other woods suitable for pulp, cut on Crown lands, seems amply justified.

(6) An analysis of the timber situation in Northern Ontario reveals a need for capital for the development of these resources. Up to the present the capitalists who have interested themselves in this industry, have chiefly confined their attention to Quebec province. The Northland offers investments equally as good as those of the neighboring province. The desirability of reduced timber dues may be discussed in this connection.

(7) The wooded condition of the large land areas, makes adequate fire protection of towns and forest lands imperative.

(8) The available water powers of Northern Ontario are unique, being found among the pine and hardwood forests and in many cases contiguous to mineral deposits. The raw material and the power for their manufacture are thus side by side. They are the basis of much possible industrial development.

(9) The 20,000,000 acres of agricultural lands offer great inducements to the prospective settler. Land can be taken up within a reasonable distance of railroad facilities and a town. The markets await the produce of the farm-to-be. The land is well timbered and while it has to be cleared, offers an unlimited supply of fuel and gives the settler an immediate merchantable asset in the shape of pulpwood.

(10) Crop raising in Northern Ontario has long passed the experimental stage, as actual production has shown.

(11) The most serious rival to Northern Ontario's early settlement is the manner in which the attractions of Western Canada, as an agricultural area, are being advertised. It will apparently be necessary to increase the provincial government s campaign in that direction, with a view to diverting to the north part of the immigration at present going westward. Ready-made farms could be given a fair trial, as they have met with success in the west.

(12) Considerable assistance is required from the Provincial Government in cutting roads in the agricultural regions which it is desired to settle. It appears unfair to place almost the entire burden of this work upon the incoming settler himself. Only two Government roads cross the last 114 miles of the Government railway.

(13) While special rates on settlers' effects are in operation on the Ontario Government's railroad, it might prove advisable to offer even further facilities in that direction.

(14) An examination of the position in the Northland reveals the necessity of concentrating all possible effort from many directions upon the early settlement of the agricultural districts. This is made the more important by the fact that much business arising from mining and railroad camps must be considered to some extent temporary.

(15) There are good trade prospects in the north and the outlook is bright. The present annual purchasing power of the territory from North Bay to Cochrane, including the towns, mining regions and railroad and lumber camp is, at a low estimate, $45,599,320.

(16) The competition of Quebec province in the north has already assumed large proportions and will extend still further. Comparatively, Quebec province is making a greater annual increase in the business obtained, although Ontario possesses a larger volume at the present time. Quebec competition will be assisted by the completion of the Grand Trunk Pacific which will place Cochrane only 568 miles from Quebec City.

(17) It would appear that many Ontario houses have not studied

trade conditions sufficiently in New Ontario, as is evidenced by the fact that they are not catering to the special requirements of the market.

(18) The passing of the so-called veterans' claims, in the shape of agricultural lands, to the speculator is retarding settlement. Legislation appears to be necessary in order to deal with this matter in a way that will insure the tilling of these lands.

(19) It might prove desirable to consider the appointment of a Northern Ontario colonization commission whose duty would be to handle the entire question of the agricultural settlement of the Northland. The membership of the commission would naturally include representatives of the various Provincial Government departments now interested individually in this matter.

APPENDIX I.

FREIGHT RATES ON SILVER ORE.

The freight rates on silver ore from Cobalt to the smelters in effect on the 1st day of January, 1911, were as follows:—

From Cobalt to North Bay—

Below $49.00 per ton	10 cents per 100 lbs.
Above $49.00 per ton, billed to Canadian points	14 cents per 100 lbs.
Above $49.00 per ton, billed to outside points	16 cents per 100 lbs.

SILVER ORE, CARLOADS, MINIMUM 30 000 POUNDS.

From North Bay to	A	B	C	D
		Rates in cents per 100 lbs.		
Marmora, Ont	18	20	27	34
Copper Cliff, Ont	10	12	16	21
Orillia, Ont	11	13	17	21
Thorold, Ont.	14	16	21	26
Toronto, Ont	12	14	19	24
*Denver, Colo., U.S.A.	40	46	54	62½
*Omaha, Neb	30	36	44	52½

Application of Rates.

Group A.—Rates apply when valuation is under $50.00 per net ton.

Group B.—Rates apply when valuation is $50.00 and under $100.00 per net ton.

Group C.—Rates apply when valuation is $100.00 and under $500.00 per net ton.

Group D.—Rates apply when valuation is $500.00 and over per net ton.

When shipments are made to Eastern United States points, a through rate is not quoted, but cars are billed to the frontier, to Buffalo, Black Rock or Suspension Bridge, N.Y. From there new rates and ratings apply.

SILVER ORE, CARLOADS. MINIMUM 40,000 POUNDS.

	A	B	C	D
		Rates in cents per 100 lbs.		
From North		15	19½	24½

* The splitting point for values in the application of rates in the cases of Denver and Omaha is one dollar below that given above, and the minimum carload is 40,000 pounds.

Application of Rates.

Group divisions A, B, C and D apply on same valuation as in previous table.

SILVER ORE, CARLOADS, MINIMUM 50,000 POUNDS.

From Buffalo, Black Rock and Suspension Bridge, N.Y., to	A	B	C	D
		Rates in cents per 100 lbs.		
Bergen Junction, N.Y.	13	16	22	28
Carnegie, Pa	10	11½	18	25½
Chrome, N.J.	13	16	22	28
Newark, N.J.	13	16	22	28
New York, N.Y.	13	16	22	28
Perth Amboy, N.J.	13	16	22	28
Norfolk, Va., U.S.A.	19	24	32	42

Application of Rates.

Group A.—Rates apply when valuation is under $100.00 per net ton.

Group B.—Rates apply when valuation is over $100.00 and does not exceed $800.00 per net ton.

Group C.—Rates apply when valuation is over $800.00 and does not exceed $2,000.00 per net ton.

Group D.—Rates apply when valuation is above $2,000.00 per net ton.

Notes.

Shipments are billed at the highest rates (Column D) and charges are collected at destination accordingly. On presentation of paid expense bill and signed assay certificate from the smelter, showing the value of the ore to be less than the rating of Group D, charges are adjusted in accordance with the valuation to the above rates. The smelter returns to the mine or owner before deducting transportation charges are the values used in determining the freight charges.

The freight charges on ore shipped from Cobalt to Hamburg, Germany, were $13.47 per ton when shipped via Montreal during the summer. In winter the ore goes via Boston and the rate was then $15.20 per ton.

APPENDIX II.

GENERAL INFORMATION FOR PROSPECTORS IN ONTARIO.

Acquisition of mining claims in Ontario depends, in the first instance, upon the discovery of valuable mineral, followed up by staking out and recording the claim, performing and filing proof of work applying for a patent and paying a small price per acre; all as set forth in the provisions of the Act. See sections 35, 67, 2 (*x*), 54-56, 59, 60, 78, 79, 106, 107.

No one is entitled to prospect or stake out or acquire unpatented mining lands or to acquire any unpatented right or interest in them without first taking out a miner's license, which can be obtained from the Bureau of Mines, or, except in the case of a company, from any Mining Recorder. See sections 22-33. The license is good throughout the Province, but must be renewed not later than 31st of March each year (sections 23, 27). In order to prospect in a Forest Reserve, a prospecting permit also must be obtained which will be issued at the Bureau of Mines, upon the Bureau being satisfied of the carefulness and integrity of the applicant. Crown lands in forest reserves may be leased, but not sold (sections 44-46).

Generally speaking, all Crown lands and lands of which the minerals are reserved to the Crown are open to prospecting and staking out if not already taken up; but there are a few exceptions. See sections 34-43. Specific information can be had and maps showing claims taken up and lands still open can be seen at the office of the Recorder.

All claims in unsurveyed territory must be laid out with boundaries running due north and south and east and west, and the boundaries of all claims go down vertically on all sides. An ordinary claim in unsurveyed territory is a square of 40 acres, being 20 chains, or 1,320 feet, on each side. Lands in surveyed townships and in old mining locations must be laid out as specified in the Act. Provision is also made for irregular pieces lying between other claims or lands not open to staking or bordering on water. See sections 49-52 Claims in Special Mining Divisions must be only half the size of ordinary claims, and in unsurveyed territory must be laid out 20 chains, or 1,320 feet, from north to south and 10 chains, or 660 feet, from east to west (section 51). No more than three claims may be staked out or recorded in the name of one licensee in any one Mining Division during any license year (section 53)

Anyone who records a claim upon a fraudulent affidavit of discovery, or who is guilty of any fraud in connection with the acquisition of the claim, in addition to being liable to criminal prosecution and to forfeiture of his license, will not acquire a good title to the property; and anyone who except as authorized by the Act, stakes out any lands open to prospecting or puts any post or markings on such lands, or who stakes out a claim and fails to record it, is not entitled to again stake out any part of the same lands or to acquire any interest in them unless he first obtains a certificate from the Recorder, which can be granted only on proof of good faith and payment of a fee of $20. See sections 66, 176, 33, 57.

Upon the other hand, for the protection of purchasers and the security of title, it is provided that when a discovery has been allowed, and the time for appeal elapsed, the sufficiency of that discovery cannot afterwards be questioned in any proceeding of Court; and a certificate of record even without allowance of discovery is impeachable only when obtained by fraud or issued in mistake. See sections 92 65.

To meet cases where a discovery of valuable mineral cannot readily be made upon the lands, the Act provides for the granting of what are called Working Permits, which give the licensee exclusive possession of an area of the size and form of a mining claim for six months, renewable for a further six months, that he may thoroughly prospect the property or sink upon it without interference from other prospectors. To obtain a working permit the lands must be staked out and applied for as provided in the Act. The area remains open to other prospectors for 60 days after the staking out. Failure to carry out the required amount of work forfeits the permit. If the holder of a permit makes a discovery of valuable mineral he must stake out and record a mining claim in the usual way. If he fails to do so his rights are at an end upon the expiration of the permit. See sections 94-105.

Where a prospector finds a vein or other indications of valuable mineral, not sufficient to stake out a claim upon, but which he desires to follow up, he may while diligently pursuing his search thereon keep other prospectors off that particular place (not exceeding 150 by 50 feet) by planting prospecting pickets and marking a line, as provided in section 56.

The Act makes provision for speedy and inexpensive adjudication of disputes regarding unpatented mining lands. These are to be dealt with by the Mining Recorder of the division and by the Mining Commissioner, subject to appeal to the ordinary Court, the hearings being held in the local districts. See sections 123-156.

It is intended, as far as possible, to protect the honest prospector who complies substantially and to the best of his ability with the requirements of the Act from being defeated of any just claim by technicality, but a prospector should always endeavor, if he desires to avoid trouble and possibility of loss, to follow the provisions of the Act as carefully and accurately as possible.

For full information upon the various matters reference must be made to the Act itself. The index at the back will be found of assistance in finding what is desired.

Maps and blank forms and other general information can be obtained from the Bureau of Mines, Toronto, or from any Mining Recorder.

APPENDIX III.

CONDITIONS WITH RESPECT TO THE OFFER FOR LEASE OF THE ABITIBI PULP LIMIT.

The successful tenderer shall enter into an agreement with the Government requiring him to erect within the limits of the territory covered by the right to cut pulpwood, or at some other place approved by the Lieutenant-Governor-in-Council, a pulp and paper mill costing, with the equipment thereof and machinery contained therein, not less than *five hundred thousand dollars*, and will operate the same so that the daily output thereof shall not be less than *one hundred tons of paper*, and so that at least *two hundred and fifty hands* on an average shall be kept employed in connection therewith for at least ten months of each and every year

The said sum of *five hundred thousand dollars shall be expended as follows:* One hundred thousand dollars during the first year, two hundred thousand dollars during the second year, and the remainder of the said sum during the third year, it being distinctly understood that the erection of such mill and the employment of the hands aforesaid shall form part of the consideration for the price of the pulpwood, and that the cutting of the said pulpwood for the use of the mill may begin as soon as and when one hundred thousand ($100 000) dollars shall have been expended on the erection of the said pulp and paper mill and equipment thereof.

(2) The successful tenderer to have the right to cut and remove spruce, balsam, Banksian or jack pine, poplar and white wood trees, nine inches and upwards in diameter, two feet from the ground, sufficient to supply the mill or mills to be erected for a period of twenty-one years, from unoccupied, unsold and unlocated lands of the Crown as follows: Being composed of land situate near the Upper and Lower Abitibi Lakes and along the Abitibi River and its tributaries, in the District of Nipissing, containing by measurement 1,560 square miles, more or less the outlines of which are more particularly described as follows, that is to say:

Commencing at the north-west angle of the township of Stimson, sixteen miles east of the town of Cochrane at the junction of the Temiskaming and Northern Ontario Railway with the Grand Trunk Pacific Railway; thence east astronomically fifty-four miles, more or less, to the Interprovincial boundary line between Ontario and Quebec; thence south astronomically along said boundary line forty-two miles; thence west astronomically twenty-three and one-half miles, more or less, to the south-east angle of the township of Michaud; thence continuing west astronomically along the south boundary of said township six miles to the south-west angle thereof; thence north astronomically along the west boundary of said last mentioned township, six miles, to the south-east angle of the township of Munro; thence west astronomically along the south boundary of said township of Munro six miles to the south-west angle thereof; thence north astronomically along the west boundary thereof six miles to the south-east angle of the township of Coulson; thence west astronomically along the south boundary of said township of Coulson and along the south boundary of the township of Wilkie, twelve and a half miles, more or less, to the south-west angle of the latter; thence north astronomically along the west boundary of the said township of Wilkie, six miles, to the south-east angle of the township of Teefy; thence west astronomically along the south boundary of said township, six miles, to the south-west angle thereof; thence north astronomically along the west boundary of the townships of Teefy, Edwards, Mortimer and Stimson, twenty-four miles, to the place of beginning.

Excepting and reserving nevertheless from the above described area the townships of Warden and Milligan, the Abitibi Indian Reserve, the land covered by the waters of Upper and Lower Abitibi Lakes, and all islands therein, the right of way of the Grand Trunk Pacific Railway, including station grounds and town sites, all lands heretofore patented, leased, located or applied for, in respect of which such proceedings have been taken, or shall hereafter be taken, as in the opinion of the Minister of Lands, Forests and Mines entitles the applicant or applicants to a Lease or Patent for such lands, together with the right of the Crown to sell, lease, locate or otherwise dispose of any lands included in the hereinbefore described area on the same terms and conditions for settlement, mining or other purposes as ordinary Crown Lands situate elsewhere.

Reserving also to the Crown all water power privileges on said territory and the right of the Crown to raise, hold and maintain the waters in Abitibi Lakes to a height found necessary or expedient for the development of the same.

(3) The successful tenderer shall pay dues of 40 cents per cord for spruce and 20 cents per cord for the other woods mentioned, or such other rates as may from time to time be fixed by the Lieutenant-Governor-in-Council.

(4) The successful tenderer to get the right to cut the wood only, and not to have any right to the soil or user thereof, except as may be necessary for cutting and removing the wood, subject to such reasonable terms, conditions and regulations as to the cutting, measuring, removing and driving of the same as may from time to time be imposed by the Lieutenant-Governor-in-Council.

(5) The successful tenderer shall not have the right to cut or remove timber of any kind from any lands already under timber license or permit from the Crown, or which may hereafter be placed under such license or permit for the cutting of white and red pine during the time such license or permit is in force, or until after the pine timber has been cut therefrom, nor shall any wood be cut on or in the immediate proximity of territory covered with green merchantable pine available for lumbering purposes or which may be considered by the Government to be pine-bearing lands.

(6) No wood cut on the said territory shall be exported or sold or disposed of to any person or persons, but such wood shall be used for the purpose of supplying the said mill or mills.

(7) The Government will not guarantee any particular quantity of wood, nor undertake to do more than grant the right to cut such quantities of wood of the kinds aforesaid as may be on the said property.

(8) Failure to erect the mill or mills and make the required expenditures within the time specified shall entail forfeiture of the right to cut pulpwood and the bonus paid for the same.

(9) Proper sworn returns of the quantity of wood cut each season shall be made to the Government in conformity with the Crown Timber Regulations, and payment shall be made for such wood not later than the first day of October in each year, and the Government shall have all the rights and powers in respect of enforcing such payment as are now provided in the case of timber cut under timber license.

(10) No refuse, saw-dust, chemicals or matter of any other kind shall be placed or deposited in any river, stream or other waters which shall or may be injurious to fish life.

DEPARTMENT OF LANDS, FORESTS AND MINES.
TORONTO, January 10th, 1911.

APPENDIX IV.

REGULATIONS RESPECTING WATER POWERS IN ONTARIO.

(1) These rules and regulations shall not apply to water privileges which in their natural condition at the average low stage of water have not a greater capacity than 150 horse-power.

(2) In granting, or leasing otherwise than under these regulations, any Crown Lands upon which a water privilege is situated, or which may be flooded or overflowed in consequence of the development and utilization thereof, the said privilege shall be reserved to the Crown, together with such an area of land in connection therewith as shall in the opinion of the Minister be required for the proper development of the same, and the construction of all necessary dams, weirs, tunnels, races, flumes, sluices, pits and other structures of works, and the erection of buildings and plant for the employment and utilization of such privilege, and storing grounds and yards in connection therewith; and there shall also be reserved in any such grant or lease, the right to flood any portion of the lands so granted or leased upon compensation to be made to the owner or lessee thereof by the person or persons to whom such privilege shall afterwards be leased; and the said water privilege, land and right so reserved shall form a separate property and may be dealt with as hereinafter provided.

(3) The right to lay out and use such roads as may be necessary for the passage to and from such water privilege or land shall be reserved in all grants or leases of contiguous or adjoining lands.

(4) The applicant for a water privilege situated on Crown Lands shall file in the Department of Lands, Forests and Mines, a plan and field notes by an Ontario Land Surveyor of survey thereof; and also a report by a competent engineer satisfactory to the Minister showing:

(*a*) The location of the water privilege applied for, and a description of the land required in connection therewith.

(*b*) The height of the fall or rapid, the volume of water at the average high and low stages of same, the estimated capacity in horse-power of the fall or rapid in its natural condition at the average low stage of water, the height of the dams or weirs (if any) which it is proposed to construct, and the increase in the level of the water which such dams or weirs will bring about.

(*c*) The plan by which the applicant proposes to develop the water privilege, showing the dams, weirs, tunnels, races, flumes, sluices, pits and other structures or works which it is proposed to build or make in connection therewith, the estimated cost thereof, and the form in which the power is to be used or transmitted, that is, whether by direct energy, electricity, compressed air, etc.

(*d*) The land or lands which would be overflowed or otherwise affected by the raising of the water or the construction of the dams, weirs, sluices, races or other works in connection with the development or use of such water privilege, and the owner or owners thereof.

The applicant shall also show the nature and location of the business, plant or manufactory in connection with which it is proposed by the applicant to utilize the water privilege, and the number of horse-power which the applicant proposes to develop and utilize; and shall furnish proof satisfactory to the Minister that the said water privilege is required for the applicant's own mechanical or industrial purposes or to supply an actual or anticipated demand for power in the neighborhood of the privilege

Provided that the Minister may dispense with the requirements of any of the preceding clauses of this regulation in case the information, plans, etc., required to be furnished are already in the possession of the Department of Lands, Forests and Mines.

(5) If so required by the Minister, the applicant shall furnish at his own expense all such measurements, plans, specifications descriptions, levels, profiles, elevations and other information as he may deem necessary for the proper consideration of the application; and the applicant shall also, if required, submit to the Hydro-Electric Power Commission of Ontario the plans and specifications showing the proposed works for the development of the said privilege and such works shall not be proceeded with until the said Power Commission has approved the same.

(6) The applicant shall submit such proof of his financial standing and ability and intention to develop the said water privilege as shall be satisfactory to the Minister.

(7) Before the lease of a water power is granted the Minister may require the applicant to deposit with the Treasurer of the Province a sum of money to be named by the Minister, conditional upon the carrying out of the works of construction and development specified in the lease within the period therein named; such sum to be returned to the lessee upon due fulfilment of such condition, otherwise to be forfeited to His Majesty the King for the use of the Province of Ontario.

(8) Upon compliance with the foregoing regulations and upon approval of the application by the Minister in writing he may order a lease of the water privilege to be issued to the applicant upon such terms and conditions and at such rental as may be fixed by the Minister. The rental reserved by any such lease or any renewal thereof shall be payable yearly in advance.

(9) No such lease shall be granted for a longer term than twenty years, but the lessee shall have the right of renewal of such lease for two further and successive terms of ten years each upon such terms and conditions as may be agreed upon or may be fixed by the Minister.

(10) The right of timber owners and others to drive their logs or timber down any river, stream or other body of water, as now by law established, shall not be interfered with, lessened or restricted by the granting of any such lease; and if any dam weir or other structure be erected or built in connection with the development of any such privilege, with the object, intention or effect of damming the water or impeding the flow thereof, full and proper provision, as now by law required, shall be made by the lessee for the safe and convenient passage of logs and timber over and through the same.

(11) The lessee under any such lease shall not destroy or obstruct the navigation of any river, stream or body of water previously navigable; but shall provide such locks, canals, passages and other means as may be necessary for the proper and safe surmounting or passing of any dam, weir or other work made or erected by the lessee, and as may be required for purposes of navigation by the Government of Canada.

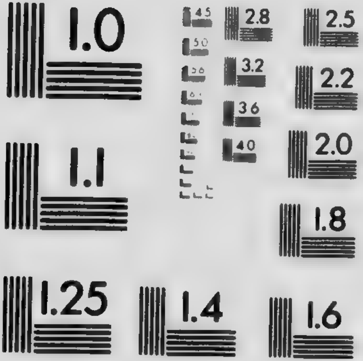
(12) In addition to any other conditions or provisions required by the Minister, the lease shall contain conditions and provisions to the following effect:

(*a*) Requiring the development and use within a period or periods to be named in the lease of a specified quantity or quantities of power or energy, estimated in horse-power.

(*b*) If the quantity of power required by the lease to be developed within a period or periods therein named is less than the full capacity of the said privilege,

MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



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upon report being made by the said Hydro-Electric Power Commission to that effect, and also that there is a *bona fide* demand for power which can be supplied therefrom, the Lieutenant-Governor-in-Council may, by Order-in-Council, require the lessee to develop the said privilege to its full capacity or to such other extent as he may deem proper or requisite within a period or periods of time to be named in the said Order.

(*c*) For the use by other parties than the lessee of surplus or unused water or power not required by him for the purposes of his business, plant or manufactory, on such terms as may be agreed upon.

(*d*) Failing an agreement between the parties concerned as to the rates or conditions for supplying power by the lessee to any person, company or corporation, or by any person, company or corporation receiving power from the said lessee, and any other person, company or corporation, either party may submit the matter to the said Power Commission, and any Order made by the Lieutenant-Governor-in-Council upon report thereon by the said Power Commission fixing and determining the said rates and conditions shall be final and conclusive and binding upon all parties concerned.

(*e*) In case of submission to the Hydro-Electric Power Commission as in paragraph "(*d*)" herein mentioned, the said lessee on being so required by the said Commission shall produce all books, accounts, records and statements verified by affidavit showing the cost of constructing, equipping and maintaining the works for the development of the said privilege and delivering the power therefrom.

(*f*) Upon complaint in writing being made that any municipal corporation is granting bonuses by supplying power, light or heat below cost to manufacturers or others, whether the said corporation is the lessee of a water privilege or is receiving power therefrom from or through such lessee, the Lieutenant-Governor-in-Council may refer the matter to the said Hydro-Electric Power Commission, who may dispose of the same in manner provided by chapter 15 of the Ontario Statutes of 1906, or any amendment thereto.

(*g*) For the purpose of ascertaining the quantity of power actually developed or capable of development from any water privilege or the amount of rental payable under a lease thereof, said Power Commission or any engineer appointed by it for that purpose, shall have free access to all parts of the works, and all books, plans or records bearing on the quantity of power, and may make measurements, take observations, etc., and any calculation as to the quantity of power so developed or capable of development made by the said Commission or by such engineer shall be binding upon the lessee.

(*h*) The power and authority to acquire water powers and works by purchase, lease or otherwise, or without the consent of the owners thereof, conferred upon the said Power Commission by chapter 15 of the Statutes of Ontario of 1906, shall be exercisable by the said Power Commission in respect of any water power leased under these regulations or any works connected therewith.

(*i*) During the construction of the works for the development of any water power, the said Power Commission or any engineer appointed by it for that purpose shall have free access to all parts of the works for the purpose of inspecting the same and of ascertaining that the construction thereof is in accordance with the plans and specifications approved by the said Power Commission.

(*j*) For the erection and maintenance by the lessee of a durable and efficient fishway when so required by the proper officer or authority in that behalf.

(*k*) During the continuance of the lease, the lessee shall keep and maintain all dams, weirs, tunnels, races, flumes, sluices, pits and other structures and works necessary for the development and use of such privilege in good repair and condition, and shall not wilfully or otherwise injure or destroy the same or any part thereof, but at the expiry or sooner determination of the lease, shall leave all such structures and works in good repair and condition, reasonable use and wear thereof and damage by fire and tempest only excepted, and so that their subsequent usefulness shall not be lessened by any act of the said lessee.

(*l*) At the expiry or sooner determination of the lease, the water privilege shall revert to and become the property of the Crown as fully as if no such lease had been granted, together with all dams, weirs, tunnels, races, flumes, sluices, pits and other structures or works made or erected by the lessee in connection therewith, and all buildings erected on land covered by the lease; but the lessee shall be allowed a reasonable time to be fixed by the Minister in which to remove all machinery employed by him in the development and use of the privilege, failing which removal such machinery shall become the property of the Crown. Provided that where any such buildings or structures are of a permanent character and necessary or useful for the proper development or utilization of the water privilege, the Lieutenant-Governor-in-Council may upon report in that behalf by the said Hydro-Electric Power Commission, pay the lessee by way of compensation therefor and purchase thereof, such sum or sums as he may deem proper upon the same being appropriated for the purpose by the Legislative Assembly of the Province.

(*m*) The lease shall at all times be subject to any general regulations thereafter made by the Lieutenant-Governor-in-Council affecting the construction and operation of works for the development of water privileges or the supply of power therefrom.

(13) The Lieutenant-Governor-in-Council may cancel any water power lease issued under these regulations for non-payment of rental within 90 days after the same is due or payable, whether the same shall have been demanded or not, or upon report by the said Power Commission that the conditions as to construction of the works or the development or supply of power have not been complied with, or that at any time after the water privilege has been developed either in whole or to the extent to which the lessee is bound or required to develop the same the said lessee has continuously failed or neglected for the space of one year effectually to produce power from the said privilege, either for his own use or that of other persons, unless hindered by unavoidable accident, or that the lessee has failed or neglected to comply with any of the conditions of the lease or any Order-in-Council respecting any matter or thing arising under the lease concerning which such Order is made; and publication of any Order-in-Council cancelling such lease shall be sufficient proof that the same has been duly and lawfully cancelled. Provided due notice shall be given a lessee before such cancellation in order that he may have an opportunity of being heard, should he so desire.

(14) Where a water privilege is applied for by a municipal corporation for the purpose of supplying water, power, light or heat for the use of the inhabitants of the said municipality, the Minister may issue a lease of said privilege to such corporation if otherwise entitled to receive and hold the same, on such special terms and conditions as may be recommended by the said Power Commission, and at such rental as he may deem proper.

(15) The word "Minister" in these regulations shall mean the Minister of Lands, Forests and Mines, or any Minister of the Crown performing the duties of the Minister of Lands, Forests and Mines in his absence or during a vacancy in that office; and the Minister may refer to the Hydro-Electric Power Commission of Ontario any application for the leasing of any water privilege or any matter arising out of such application or any lease made in pursuance thereof, whether hereafter or heretofore issued, for consideration, investigation and report.

(16) No water power lease shall be valid or effective unless the same is issued under the Great Seal of the Province, and is signed by the said Minister.

APPENDIX V.

CLASSIFIED STATEMENT OF FARMING IMPLEMENTS SHIPPED INTO NORTHERN ONTARIO DURING THE YEARS 1909 AND 1910 AND PART OF YEAR 1911, TO MARCH 28TH, 1911.

Description.	Years.	Amount.	Total
Binders	1909	10	
	1910	77	
	1911	55	
		—	142
Cream Separators	1909	9	
	1910	68	
	1911	31	
		—	108
Cultivators	1909	...	
	1910	4	
	1911	8	
		—	12
Feed Grinders	1909	...	
	1910	14	
	1911	6	
		—	20
Farm Sleighs	1909	...	
	1910	102	
	1911	104	
		—	206
Fanning Mills	1909	5	
	1910	22	
	1911	31	
		—	58
Farm Wagons	1909	30	
	1910	199	
	1911	99	
		—	328
Farm Scales	1909	...	
	1910	15	
	1911	28	
		—	43
Gasoline Engines for Threshers	1909	2	
	1910	5	
	1911	7	
		—	14
Hay Rakes	1909	17	
	1910	135	
	1911	109	
		—	261

Description.	Year.	Amount.	Total.
Harrows (disc)	1909	121	
	1910	211	
	1911	138	
		—	470
Harrows (spring tooth)	1909	7	
	1910	37	
	1911	27	
		—	71
Harrows (section smoothing)	1909	57	
	1910	121	
	1911	168	
		—	346
Hay Forks	1909	6	
	1910	6	
	1911	...	
		—	12
Hay Pressers	1909	...	
	1910	17	
	1911	3	
		—	20
Hay Loaders	1909	...	
	1910	...	
	1911	3	
		—	3
Land Rollers	1909	34	
	1910	76	
	1911	12	
		—	122
Manure Spreaders	1909	3	
	1910	7	
	1911	5	
		—	15
Mowers	1909	14	
	1910	141	
	1911	113	
		—	268
Pulveriser	1909	...	
	1910	...	
	1911	2	
		—	2
Plows (hand)	1909	47	
	1910	131	
	1911	82	
		—	260
Plows (Sulky)	1909	...	
	1910	9	
	1911	...	
		—	9
Rake (side delivery)	1909	...	
	1910	1	
	1911	...	
		—	1

Description.	Year.	Amount.	Total.
Reapers	1909	3	
	1910	2	
	1911	...	
		—	5
Root Pulpers	1909	...	
	1910	...	
	1911	6	
		—	6
Sickle Grinders	1909	7	
	1910	17	
	1911	18	
		—	42
Seeders	1909	...	
	1910	7	
	1911	...	
		—	7
Scufflers	1909	9	
	1910	59	
	1911	41	
			109
Seed Drills	1909	9	
	1910	22	
	1911	71	
		—	102
Straw Cutters	1909	3	
	1910	18	
	1911	21	
		—	42
Threshing Machines	1909	3	
	1910	3	
	1911	4	
		—	10
Threshing Machine Engines	1909	...	
	1910	...	
	1911	5	
		—	5
Tread Powers	1909	...	
	1910	...	
	1911	2	
		—	2
Turnip Seeders	1909	...	
	1910	...	
	1911	5	
		—	5
Tedders	1909	...	
	1910	23	
	1911	26	
		—	49
Windmills	1909	...	
	1910	3	
	1911	...	
		—	3

Description.	Year.	Amount.	Total.
Total number of implements		...	3,178
Wire (fencing) (cars)	1909	...	
	1910	7	
	1911	...	
			7
Grand Total			3,185

APPENDIX VI.

LANDS WHICH ARE OPEN FOR SALE IN NORTHERN ONTARIO.

NIPISSING DISTRICT.—NEW LISKEARD AGENCY. Agent, J. J. Grills.—This agency contains nineteen townships, situated north and west of Lake Temiskaming. The agent resides at New Liskeard in the township of Dymond, at the head of the north-west bay of the lake. It is reached at present by the Temiskaming and Northern Ontario Railway from North Bay.

Townships: Bucke Kerns, Bryce, Firstbrook, Casey, Armstrong, Harris, Harley, Beauchamp, Dymond, Henwood, Tudhope, Hudson, Cane, Lundy, Brethour, Auld, Hilliard, Marter, Marquis.

ENGLEHART AGENCY. Agent, Joseph Woolings.—This agency contains twenty townships, situated north of the New Liskeard Agency. The agent resides at Englehart in the township of Evanturel. Englehart is a station on the Temiskaming and Northern Ontario Railway, twenty-five miles north of New Liskeard.

Townships: Pense, Marter, Blain, Ingram, Chamberlain, Gross, Evanturel, Savard, Otto, Dack, Sharpe, Eby, Robillard, Davidson, Burt, Truax, Catherine, Holmes, Pacaud.

Upon consideration of the report of the Honorable the Minister of Lands, Forests and Mines, dated March, 1908, the Committee of Council advise that all Crown Lands lying north of Lake Nipissing and the Mattawan and French Rivers and the Georgian Bay in the Townships appropriated for sale for agricultural purposes, shall be sold at a uniform price of *fifty cents per acre,* one quarter cash, and the balance in three annual instalments with interest at six per cent. per annum, each settler to be allowed to purchase a half lot of one hundred and sixty acres, more or less, according to survey, and no person shall hereafter be permitted to hold more than one location of one hundred and sixty acres either by purchase directly from the Crown or from or under a purchaser by assignment or tax deed.

That no patent shall issue for any land so sold until the expiration of three years from the date of sale, nor until the purchaser, or those claiming under him, or some of them, have performed the following settlement duties, that is to say: Have cleared and had under cultivation *at least 10 per cent. of the said land,* whereof at least two acres shall be cleared and cultivated annually during the three years next after the date of sale, to be computed from said date, and have built a house thereon fit for habitation, at least 16 x 20 feet, and have actually and continuously resided upon and cultivated the said land for the term of three years next succeeding the date of purchase, and from thence up to the issue of the patent except that the purchaser shall be allowed six months from the date of purchase to enter upon and occupy the said land, and that absence from the said land for in all not more than six months in any one year, to be computed from the date of sale, shall not be held to be a cessation of residence provided the land be cultivated as aforesaid. On failure to go into residence in six months and perform the settlement duties as aforesaid, or any of them, the sale shall be forfeited and all rights of the purchaser, or anyone claiming under him in the land shall cease.

That the sale shall also be subject to the following regulations respecting pine timber. All pine trees growing or being upon the said land so sold shall be considered as reserved from such sale, and such lands shall be subject to any timber license covering or including such land in force at the time of such sale or granted within three years from the date of such sale, and such trees may be cut and removed from such land under the authority of any such timber license, while lawfully in force, but the purchaser at such sale or those claiming under him may cut and use such trees as may be necessary for the purpose of building and fencing on the land so purchased, and may also cut and dispose of all trees required to be removed in actually clearing the said land for cultivation. but no pine trees except for the necessary building and fencing aforesaid shall be cut beyond the limit of such actual clearing before the issue of patent for such lands, and all pine trees so cut and disposed of (except for the necessary building and fencing aforesaid) shall be subject to the payment of the same dues as are at the time payable by the holders of license to cut timber or saw logs.

That purchasers of public lands shall not, unless under special authority of the Minister of Lands, Forests and Mines, or for clearing, fencing or building purposes on the said land, be permitted to cut any description of timber or logs thereon or to dispose of it to others until they have gone into actual *bona fide* occupation of the said land, have built a habitable house thereon 16 x 20 feet at least, have resided thereon, actually and continuously for at *least six months, and cleared and put under cultivation two acres at least of the said land.* Persons contravening this regulation shall be subject to the penalties established by law for cutting timber on the public lands without authority. These regulations shall not be construed as in any way affecting the regulations respecting pine timber of the 27th day of May, 1869.

APPENDIX VII.

REGULATIONS PROHIBITING THE EXPORT OF PULPWOOD CUT ON ONTARIO CROWN LANDS.

(1) Every license or permit conferring authority to cut spruce or other soft wood, trees or timber, not being pine, suitable for manufacturing pulp or paper, on the ungranted lands of the Crown, or to cut such timber reserved to the Crown on lands leased or otherwise disposed of by the Crown, which shall be issued on or after the 30th day of April, 1900, shall contain and be subject to the condition that all such timber cut under the authority or permission of such license or permit shall, except as hereinafter provided, be manufactured in Canada, that is to say, into merchantable pulp or paper, or into sawn lumber, woodenware. utensils, or other articles of commerce or merchandise as distinguished from the said spruce or other timber in its raw or unmanufactured state; and such condition shall be kept and observed by the holder or holders of any such license or permit who shall cut or cause to be cut spruce or other soft wood, trees or timber, not being pine, suitable for manufacturing pulp or paper, under the authority thereof, and by any other person or persons who shall cut or cause to be cut any of such wood, trees or timber, under the authority thereof and all such wood, trees or timber, cut into logs, or lengths or otherwise, shall be manufactured in Canada as aforesaid. It is hereby declared that the cutting of spruce or other soft wood, trees or timber, not being pine, suitable for manufacturing pulp or paper, into cordwood or other lengths is not manufacturing the same within the meaning of this regulation.

(2) Should any holder of a timber license or permit, or any servant or agent of such holder, or any person acting for him, or under his authority or permission, violate or refuse to keep and observe the condition mentioned in the preceding regulation, then and in such case the license or permit to cut spruce or other soft wood, trees or timber, not being pine, on the berth, territory, lot or lots included in the license or permit, and on which or on any part of which such timber was cut, and in respect of which or any part of which there was a breach of such regulation or a refusal to observe or keep the same, shall be suspended and held in abeyance, and shall not be re-issued, nor shall a new license or permit issue unless and until so directed by the Lieutenant-Governor-in-Council, and then only upon such terms and conditions as the Lieutenant-Governor-in-Council may impose.

(3) The Commissioner of Crown Lands, his officers. servants and agents may do all things necessary to prevent a breach of the aforesaid condition or regulation and to secure compliance therewith, and may for such purpose take, seize, hold and detain all logs, timber or wood so cut as aforesaid, and which it is made to appear to the Commissioner of Crown Lands it is not the intention of the licensee, owner or holder, or person in possession of to manufacture, or cause to be manufactured as aforesaid in Canada, or to dispose of to others who will have the same so manufactured in Canada, until security shall be given to His Majesty satisfactory to the Commissioner that the said condition will be kept and observed, and that such logs, timber or wood will be manufactured in Canada as aforesaid; and in the event of the refusal on the part of the licensee, owner or holder, or person in possession of such logs, timber or wood, to give such security within four weeks after notice of

such seizure and demand of security by or on behalf of the Commissioner, then the Commissioner may sell or cause to be sold such logs, timber or wood by public auction after due advertisement to some person or persons who will give such security to His Majesty as the Commissioner may require that such logs, timber or wood shall be manufactured in Canada. The proceeds of such logs, timber or wood shall after such sale and after deducting all expenses of such seizure and sale, and any sum due and owing to His Majesty for or in respect of any timber dues, trespass dues, ground rent, or on account of the purchase of any timber or timber berths by the owner, licensee or holder of a permit or other person who has cut, or caused to be cut such logs, timber or wood, or who is the owner or holder of the same, be paid over to the person entitled to the same.

(4) Provided, nevertheless, that nothing in the preceding regulations which requires spruce or other timber, not being pine, suitable for manufacturing pulp or paper, to be manufactured in Canada as aforesaid, shall apply to logs, timber or wood cut and in use in Canada for fuel, building or other purposes for which logs, timber or wood in the unmanufactured state are or may be used.

(5) Provided, further, that these regulations shall not apply to the east half of the township of Aweres, in the District of Algoma, containing 18½ square miles.

APPENDIX VIII.

NORTHERN ONTARIO TOWNS—NORTH BAY TO COCHRANE.

North Bay is an important railway divisional point, with a population of 8,000. In addition to being the headquarters of the Government railroad it is also the northern terminus of the Grand Trunk Railway and the divisional headquarters of the Canadian Pacific Railway for the main line from Montreal to the Pacific Coast. North Bay is distinctly a railroad town, the locomotive repair shops, round house and other divisional departments of the Canadian Pacific Railway keeping things busy all the year round. There is no lack of educational facilities, there being a normal school, high school, two large public schools and two separate schools. Three chartered banks cater to the town's financial needs. There are seven hotels, two planing mills, a foundry and machine shop and brewery. The news of the world is distributed by one weekly and one bi-weekly newspaper. North Bay is also a base of supplies for the rich territory in New Ontario north of the town. It is situated on Lake Nipissing and is an important point for summer tourists who visit the French River settlements. The progressive North Bay Board of Trade has a membership of 110.

Latchford.—In six years this town, 94 miles from North Bay, situated on the Montreal River, has built up a population of 500. The headquarters of the Montreal River Navigation Company and the Upper Ontario Steamboat Company are here. They meet the Temiskaming and Northern Ontario trains and operate a summer route to Elk Lake and Gowganda mining districts. The ore shipments from Gowganda to the end of 1910 amounted to 736 tons. In 1910 twenty tons of ore were shipped from the Elk Lake District. Two sawmills have a capacity of 80,000 feet of lumber, 10,000 shingles and 25,000 lath per day. The Rossing plant has a capacity of 3,000 logs per day. From this point 1,600 cars of lumber have been shipped. The town has a large hotel, two schools, four churches, one chartered bank and an enterprising Board of Trade. A concrete dam is built across the Montreal River at Latchford with a view to extending navigation to Mountain Chutes, which are 12 miles from Elk Lake City and 41 miles above the base of navigation and rail connection at Latchford. Improvements will be made at Pork Rapids, eight miles up stream, and at Flat Rapids, 30 miles farther. The dam is to have eleven sluice openings, 20 feet wide, stop-logged 16 feet high, affording in flood periods a flowing section slightly greater than that which obtained under natural conditions, at the point of its location. The stop-logs will be handled by special machinery designed with a view of forcing stop logs to position and storing on the operating bridge clear of the passage way.

Cobalt.—The population of Cobalt in 1905 was 2,500; to-day it is 10,500. Five chartered banks are doing business here, while there are also 5 schools, 6 churches, a sampling plant, machine shop and foundry, and an energetic Board of Trade. Cobalt has a bright daily paper.

North Cobalt.—This town which is the home of many Cobalt miners, has a population of 1,100 and is the beginning of the great clay belt. It is 105½ miles from North Bay. The headquarters of the Nipissing Central Electric Railway, connecting with Cobalt and Haileybury, are here.

HAILEYBURY.—Haileybury is beautifully situated on Lake Temiskaming and has an excellent reputation as a residential and business centre. Across the lake on the Quebec side are a number of thriving towns serving an agricultural population of approximately 7,000. The produce is sold at Haileybury market which is attended by the people of Cobalt and of the mines. A large government dock handles freight from the Temiskaming and Northern Ontario Railway. This is transshipped to the Quebec side. About 61 settlers are adjacent to Haileybury with a total acreage of 1,000 acres under cultivation. The acreage is rapidly increasing. In 1905 the total miscellaneous freight tonnage received at Haileybury was 2,902 tons and in 1910, 25,893 tons. The town's population in 1905 was 464; to-day it is 5,031. The headquarters of the Temiskaming Navigation Company, serving points on Lake Temiskaming are situated here. The Energite Explosive Company, with an output of 15 tons per day, has a factory here, while a brickyard is also in full operation. Three chartered banks are doing business and there are four hotels, three schools, six churches and three sawmills. A sum of $5,500 has been voted for a large market building. Haileybury is connected with Cobalt and North Cobalt by an electric railway service. The town, which is 108 miles from North Bay is equipped with waterworks, sewerage, electric light and telephone.

LISKEARD.—At this point, 113 miles from North Bay, the agricultural development is noticeable. There are 2,165 settlers adjacent to Liskeard and they have received 40 car loads of agricultural implements with an approximate value of $110,000. In the territory around Liskeard and Haileybury last summer, 3,000 tons of hay and 500 tons of potatoes were produced. There are several saw mills at Liskeard together with sash and door factories, brick and tile plant, cement block plant and cannery. Liskeard is the headquarters of the Upper Ontario Steamboat Company and the Nipissing Pontiac Steamboat Company serving points on Lake Temiskaming. The Temiskaming Telephone Company gives a service to town from Latchford to Englehart and surrounding territory. Liskeard's population is 3,700. The town has a high school, public schools, separate school, five churches, Lady Minto hospital, theatre, Carnegie Library, three hotels, two banks, two weekly newspapers and a Board of Trade, who, like the Haileybury Board, are looking for new industries. There are waterworks, sewerage and electric light systems.

ENGLEHART is 138 miles from North Bay. There are unlimited agricultural possibilities here, as indicated by the fact that over 200 settlers took up land in this vicinity in the first four months of the current year. The population of the territory surrounding Englehart is approximately 2,100. This is also a railway divisional point with locomotive round house, supply storehouse, etc. A branch line runs to Charlton, a distance of eight miles. The Temiskaming and Northern Ontario Railway have a greenhouse here which is made the headquarters for horticultural supplies, experiments and reforestration. October, 1906, saw the first train into Englehart. Nearby there is considerable undeveloped waterpower. A well 330 feet deep, 40 feet of it drilled through rock, gives an excellent water supply. The town's population is 815. There are four churches, two hotels, two weekly newspapers and an enthusiastic Board of Trade in the process of organization. Englehart is keeping an eye on promising mining developments at Swastika.

MATHESON.—This is a thriving town of 600 and is the centre of an unlimited supply of pulp wood During the past two seasons shipments of 95 cars of lumber, 400 cars of pulp wood and 334 cars of other forest products have been made. There are about 150 settlers in this vicinity. During the past two months 60 locations have been made. A public school, two churches and one chartered bank are ministering to the educational, religious and financial needs of Matheson. The principal industries are mining, farming and lumbering. The town, which is 205 miles from

North Bay, will be the headquarters for shipping on the Black River and its tributaries. It is also the entr to the township of Munroe goldfields where there are good prospects.

COCHRANE.— This is the northern terminus of the Temiskaming and Northern Ontario Railway. The Grand Trunk Pacific Railway has made Cochrane a divisional point. The Temiskaming and Northern Ontario Railway has a repair shop, round house, water tanks, coal chutes, etc., here. The Grand Trunk Pacific passes through Cochrane, running east and west. There is a large Union Station used by the two railroads. Cochrane is 480 miles from Toronto, 568 miles from Quebec, 613 miles from Montreal, via North Bay, and 775 miles from Winnipeg. The distance to James Bay is 175 miles. There are 2,000 homesteads taken up in this neighborhood with 1,500 bona fide settlers and their families on the land. Cochrane is only two years old and has a population of 2,500. There are four churches, two public schools, one saw-mill, two banks, one newspaper, electric light and power plant, waterworks, sewerage system and an optimistic and hardworking Board of Trade. Cochrane is 252 miles from North Bay.

APPENDIX IX.

INDUSTRIAL INDUCEMENTS OFFERED BY CERTAIN NORTHERN ONTARIO TOWNS.

The following brief information gives an idea of the inducements offered by certain towns in Northern Ontario to new industries. Further and detailed information can be obtained from the Secretary of the Board of Trade in each town named.

Cobalt.—There is almost an unlimited supply of waterpower, and already a large investment has been made in harnessing the power at this point. The cost is comparatively low. Cobalt will consider exemption from taxes as an inducement to bona fide and suitable industries.

Latchford.—There are openings in this town for a smelter for the treatment of low grade ore and also for a pulp mill.

Haileybury.—A good outlook exists in this vicinity for a number of manufacturing establishments. This is largely confined to woodenware products. These would consist of the following lines: sash and door, excelsior, lumber export, match, incubators and brooders, fence pickets, butter boxes, jewellery boxes, packing boxes, washboards, buckets, tubs and pails, kitchen cabinets, cedar canoes, silver plating, gold plating, saw mills, planing mills, pulp mills, desiccated potatoes and starch. Up to the present the town has not bonused any industries. The authorities, however, are willing to grant free water and possibly exemption from taxation other than school taxes for a period of years. If the prospective industry appealed to the citizens, a free site might be given. Haileybury has a large quantity of available power through the development of the Montreal River powers. The proximity to the raw material, especially in the case of wares made from wood should make manufacturing costs low. In connection with silverware manufacturing, it may be recalled that silver bars, with a high percentage of the pure metal, have been shipped from the concentrating and cyaniding plants in the district. Regarding starch and desiccated potato factories, the potato crop in Northern Ontario has been made to pay well.

New Liskeard.—The country surrounding this town is well supplied with water powers. Power is produced about two miles from New Liskeard at the falls on the Wabi River. The local power company are selling power as low as $18 per h.p. Power is also available from the Montreal River and the falls on the Quizes River, both within 20 miles of New Liskeard. This town offers special advantages to manufacturers of woodenware products, pulp and paper. It is thought also that manufacturers of stoves and castings such as would be used in mining and lumbering should find New Liskeard a desirable manufacturing centre. The industries at present located in the town are satisfied with the natural conditions offered. The town, therefore, has not yet declared itself either opposed or in favor of making exemptions or giving bonuses of any kind.

Cochrane.—There are openings at Cochrane for manufacturing industries such as would require timber in some form, as a saw mill or sash and door factory and also for a brick yard and cement block plant. The available power is electric at the rate of $50 per horse-power for motor under ten horse-power and $40 over that per year, for day service only. Water powers for the development of electric power on a large scale, however, abound in all the rivers of the Hudson Bay watershed and in due time all the power required for Cochrane will be developed. The town does not feel justified in offering a bonus to prospective manufacturers at present.

APPENDIX X.

SUMMARY OF REPORT BY THE TARIFF BOARD OF THE UNITED STATES RELATIVE TO THE PULP AND NEWS-PRINT PAPER INDUSTRY IN CANADA AND THE UNITED STATES.

The report of the newly constituted American Tariff Board respecting the pulp and news-print paper industry in Canada and the United States generally shows excellent conditions under which this industry is carried on as compared with conditions existing in the neighboring republic. This is an important fact, considered in conjunction with the enormous forest wealth, water powers and industrial possibilities of Northern Ontario. The data on pulp and paper in the United States was secured from 53 ground-wood mills, 25 sulphite mills, and 38 news-print mills, making a total of 116 mills and representing 940,478 tons of news-print paper or 80 per cent of the news-print paper production of the United States. The data for Canada were taken from 13 ground-wood mills, 5 sulphite mills, and 7 news-print paper plants. Reports were secured covering 78.2 per cent. of the news-print paper, 60.2 per cent. of the ground-wood, and 55.7 per cent. of the sulphite pulp capacity in Canada. The report does not deal with bleached sulphite pulp, sulphite made by the Mitscherlich process, sulphate, or soda pulps.

The news-print paper producing capacity of the United States under ordinary conditions exceeds one and one-third million tons per annum, which is more than one-fourth of all kinds of paper produced. There are 824 plants making paper of some kind, and the total paper productive capacity is 5,196,398 tons. Thirty States, counting the District of Columbia as a State, produce paper in some of its forms.

The figures respecting ground-wood and chemical pulp productive capacity in the United States show 192 ground-wood pulp mills, having 1,485 grinders, producing 2,008,680 tons of air-dry ground-wood pulp; 90 sulphite plants, producing 1,204,894 tons of air-dry sulphite fibre (bleached and unbleached); and 31 soda pulp plants, producing 417,387 air-dry tons of that commodity. There are 555 digesters installed in the United States. The distributions of these between sulphite and soda pulp is not here attempted. Twenty-one States produce pulp of some kind and to some extent.

Some important conclusions are made by the Tariff Board respecting labor costs, from which it is seen that Northern Ontario's water power will prove a vital factor in the pulp and paper industry in this country. The extreme variation in the labor costs, says the report, is due neither to difference in individual efficiency of labor nor to that in equipment, since the equipment of the grinding rooms is fairly similar in all mills under investigation. The difference is principally due to variations in available water power. A grinder built to operate under, say, 600 horse-power, and of a capacity of from 6 to 8 tons per day will turn out its full quota when water is plentiful and work is conducted under full pressure. As the water supply diminishes, the productivity of the grinder rapidly falls off without allowing for any saving in the labor. The result is that the same amount of labor produces twice as much in one case as it will in another. The variation under the heading of other costs is likewise very wide. This item covers a large number of cost elements, such as repairs, general supplies, general works expense, office expense, etc., which will differ according to the age of the plant, the scale on which operations are conducted, etc.

Along this line the report deals with the cost of hydraulic development, which is purely a matter of local conditions and may vary from below $30 to over $100 per horse-power. A desirable site for a water-power development is valued, first, by the extent of its drainage area; second, its run-off per square mile; third, the constancy of this run-off, which fixes the average yearly flow; fourth, the reservoir possibilities; fifth, the length and height of the dam and necessary length of the penstocks and flumes to carry the water to the turbines; and, sixth, by the riparian rights.

Again, a power site in a remote location would not stand as high an investment as would a site in a location where its cost of development would be regulated on the basis of what the power could be disposed of for manufacturing purposes.

Climatic conditions are also a factor in the cost of developing a power due to their influence on the fluctuation in flow from severe winters in northern climates and dry summers in warmer climates. It is obvious, therefore, that the value of a water power for a ground-wood property must be determined entirely by the local conditions. This variation being so great, any attempt to fix a definite cost per ton of production without exact knowledge of the site is problematical.

Items.	Lowest Cost per Ton of Product.		Highest Cost per Ton of Product.		Average Cost per Ton of Product.	
	United States.	Canada.	United States.	Canada.	United States.	Canada
Ground-Wood pulp:						
Wood	$ 6.90	*$4.26	$13.33	*$9.62	$10.23	*$5.70
Manufacturing labor	.98	*1.11	5.90	*2.29	2.18	*1.73
Other costs	.30	*.76	6.83	*3.68	2.18	*2.13
Total cost in bulk at works	9.80	*7.37	21.32	*13.98	14.59	*9.56
Sulphite fibre:						
Wood	13.28	†11.75	25.89	†19.66	18.58	†13.13
Manufacturing labor	2.09	†1.86	6.51	†4.71	3.84	†3.21
Other costs	6.72	†8.47	14.68	†12.23	9.57	†10.13
Total cost in bulk at works	24.47	†24.02	40.16	†33.84	31.99	†26.47
News-print paper:						
Ground-wood pulp	8.26	‡6.16	18.54	‡9.93	13.27	‡8.49
Sulphite fibre	6.45	‡5.28	14.12	‡9.29	8.63	‡7.41
Other materials	.32	‡.61	3.25	‡4.03	.84	†.99
Total materials	14.64	‡13.10	29.22	‡19.55	22.74	‡16.89
Manufacturing labor	2.19	‡2.72	7.26	‡3.59	3.27	‡3.10
Other costs	4.63	‡6.31	10.05	‡9.46	6.87	‡7.45
Total cost in bulk at works	24.50	‡24.97	43.00	‡30.18	32.88	‡27.53

In gathering data respecting the cost of production of pulp and news-print paper in Canada, the schedules received by the Board from Canada cover 13 ground-

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* For mills having 2 per cent. of the total tonnage, data were received for 9 months only. For mills having 23 per cent. of total tonnage, data were received for a shorter period. These mills have been raised to a 12-months basis.

† For mills having 45 per cent. of the total tonnage, data were secured for 9 months only. These mills have been raised to a 12-months basis.

‡ For mills having 2 per cent. of total tonnage, data were secured for 9 months only. For mills having 13 per cent of total tonnage, data were secured for a shorter period. These mills have been raised to a 12-months basis.

wood pulp mills, producing 305,699.4 tons of pulp, at a total cost of $2,922,222 99. Of this amount 144,886.7 tons were produced for consumption in the same plant and were run in "slush" state to the paper mills. Seven plants produced 160,812.7 tons in "lapped," or pressed condition, for sale on the market as ground-wood pulp. Schedules were secured from 5 sulphite pulp mills producing 75,588 tons of fibre at a total cost of $1,999,860.51.

Reports were secured from 7 news-print paper mills, carrying 159,437.6 tons of paper, produced at a total cost of $4,389,567.18.

The table on page 103 gives a summary of the cost of ground wood-pulp, sulphite fibre and news-print paper showing lowest, highest and average cost per ton of product by special items of cost for mills, in the United States and Canada reporting data.

Ignoring the highest and lowest, the significance of which can be determined by reference to the classified cost tables for both countries, the total average cost for the two countries present some interesting comparisons. The first thing that seems significant is that the difference in cost of wood per ton of pulp is practically the difference in the total cost. For instance, in ground-wood pulp the total cost is $14.59 for the United States and $9.56 for Canada, a difference of $5.03. The cost of the wood as raw material per ton of product is $10.23 for the United States and $5.70 for Canada, a difference of $4.53, which, deducted from the total difference of $5.03, leaves a difference of 50 cents per ton in favor of Canada, 44 cents of this being in the item of manufacturing labor cost.

The Canadian average cost for sulphite was $26.47, the average for the United States mills reporting was $31.99, a difference of $5.52, of which $5.45 is absorbed by the difference in cost of wood as a raw material, leaving a net difference of but 6 cents per ton, although the difference in labor cost is 63 cents per ton in favor of Canada.

In news-print paper the effect of wood cost is not so clear, because here the raw material is pulp and not wood, but if we take 80 per cent. of the difference we find in the wood cost in ground-wood pulp, and 20 per cent. of the difference in case of sulphite pulp, we have $4.71 as the amount of the difference in the cost of news-print paper in the two countries, which is due to the difference in wood costs.

The average cost of production of news-print in Canada is $27.53 per ton; in the United States $32.88. The difference is $5.35, of which $4.71 is accounted for by difference in cost of wood as raw material in the pulp, leaving a difference of 54 cents, only 8 cents of which is covered by the difference in manufacturing labor.

The following table, also taken from the report of the Tariff Board, shows the average cost per ton of product for specified items entering into the cost of manufacture of news-print paper, for mills in Canada and the United States reporting data:—

	Average cost per ton of news-print paper.	
Items.	Canada.	United States.
Ground-wood	$8.49	$13.27
Sulphite	7.41	8.63
Waste paper	1.24	.79
Fillers	.40	.40
Other materials	.57	.42
Total materials	$16.89	$22.74
Manufacturing labor	3.19	3.27
Felts	.79	.82

Items.	Average cost per ton of news-print paper. Canada.	United States.
Wires	.33	.36
Screen plates	.03	.05
Belting	.10	.12
Lubricants	.08	.08
Coal	2.13	1.81
Wood	.16	.52
Finishing materials	1.50	.86
Other works expense	.24	.69
Water power	.30	*.31
Repair materials	.52	.85
Repair labor	.55	.55
Administration expense	.49	.45
Miscellaneous operating expense	.66	.26
Accident insurance	.03	.03
Fire insurance	.16	.07
Taxes	.09	†.26

Another interesting table shows the prices of Canadian news-print paper shipments delivered in the United States in 1910:—

Principal Points of Delivery.	Price per 100 pounds f.o.b. mill.		Costs of Delivery per 100 pounds in the United States. Freight Charges.		Duties.		Commissions.		Cartage.		Total Costs.	
	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.
New York	$1.40	$2.1325	$0.18	$0.18	$0.305	$0.32	......	$0.057	$0.0325	$0.04	$1.90	$2.65
Chicago	1.644	2.1375	.18	.18	.1875	.305	$0.056	.0656	.025	.025	2 22	2.50
St. Louis	1.40	1.765	.215	.215	.32	.32	......	......	......	......	1.935	2.30
Cincinnati	1.665	2.0095	.155	.18	.1875	.32	.09	.10	.035	.035	2.175	2.45
San Francisco	1.93	1.945	.75	.75	.32	.305	......	......	......	......	3.00	3.00
Memphis, Tenn.	1.758	......	......	......	......	......	......	......	......	......	......	......
Nashville, Tenn.	1.9603	......	.305	......	.1875	......	.1022	......	......	......	2.555	......
Knoxville, Tenn.	1.8505	......	.355	......	.1875	......	......	......	......	......	2.40	......
Louisville, Ky.	1.692	1.9365	......	.18	......	.1875	......	.096	......	......	2.30	2.40
Springfield, Mass.	1.98	2.015	.20	.18	.32	.305	......	......	......	......	2.50	2.50
Springfield, Ohio	1.7425	1.965	.155	.155	.1875	.1875	.065	.096	......	......	2.15	2.40
Fort Wayne, Ind.	1.58	1.595	.19	.19	.32	.305	......	......	......	......	2.09	2.09
Cleveland, Ohio	1.925	......	.17	......	.305	......	......	......	......	......	2.40	......
Youngstown, Ohio	1.635	......	.18	......	.32	......	......	......	......	......	2.135	......
Dayton, Ohio	1.8158	......	.155	......	.1875	......	.0667	......	......	......	2.225	......
Camden, N. J.	1.585	......	.22	......	.32	......	......	......	.035	......	2.175	......
Detroit, Mich.	1.615	1.63	.155	.155	.32	.305	......	......	.035	.035	2.125	2.125

* Includes electric power in three mills having 13 per cent. of the total product.

† Mills with 38 per cent. of total production report fire insurance, accident insurance, and taxes combined.

A further table of importance to Northern Ontario is that showing the prices of news-print paper exported from Canada to the United States during 1910:—

Destination.	F.o.b. Mill.		Delivered in United States.	
	Tons.	Average Price per Ton.	Tons.	Average Price per Ton
Boston	44	$36.98	22	$45.53
New York	638	38.72	616	48.81
Philadelphia	23	39.51	23	50.02
Pittsburg	99	39.00	....	.....
Buffalo	223	39.06	202	48.92
Summary for the 5 cities	1,027	$39.06	863	$48.92
Chicago	730	$36.84	730	$45.78
St. Louis	279	34.91	235	45.26
Cincinnati	943	36.57	475	46.43
Cleveland	66	39.43	85	47.07
Summary for the 4 middle western cities	2,018	$36.51	1,525	$45.97

As will be seen, one of the above tables shows prices in 1910 charged by Canadian paper mills for paper exported to the United States. These prices were obtained from the consular invoices, sworn to by the exporters at the United States consulates in Canada. Another table shows two sets of prices, one f.o.b. mill in Canada, the other prices delivered in the various cities in the United States, including freight and duty. These figures, however, represent a small percentage of the total imports and, therefore, must be treated with caution. It will be seen that the average f.o.b. mill price for the five cities of Boston, New York, Philadelphia, Pittsburg, and Buffalo was $39.06, and for the four Middle Western cities of Chicago, St. Louis, Cincinnati, and Cleveland $36.51. The price, however, when delivered in the respective cities, after duty and freight has been added, is fully as high, if not higher, than the corresponding average prices charged by United States mills.

It is interesting to note that, while the mechanically ground pulp imported into the United States comes almost exclusively from Canada, Europe sends that country almost exclusively chemical pulp. The United States imports from Europe, in fact, consist very largely of bleached and unbleached sulphite pulp, and of a smaller quantity of unbleached sulphate pulp, there being practically no market in this country for imported bleached sulphate, and the importation of mechanically ground pulp from Europe being uncommon. It should be added that from Germany and Holland the United States imports an inconsiderable quantity of straw pulp.

The data relative to labor conditions in the wood pulp and news-print paper industry are briefly reviewed in the following paragraphs. Original data have been secured by the Tariff Board for 17,609 employees, of whom 69.2 per cent. are in mills in the Eastern States, 13.6 per cent. in mills in the Lake States, and 17.2 per cent. in Canadian mills. Less than 2 per cent. of all the employees for whom information has been secured are females. The data secured show that a large proportion of the workers in the industry are of foreign birth, and that of the foreign a large number are of the races of southern and eastern Europe.

In the wood pulp and news-print paper industry the length of the working day for men employed by the day is, in most cases, either 9 or 10 hours. The shift workers, who, in the mills for which schedules were secured, outnumber the day workers, are divided either into three shifts or into two shifts. In the Eastern States the three-shift system is in general use, and in Canada over two-fifths of the shift workers work three shifts per day. On the other hand, all of the shift employees in the Lake States for whom information was secured work two shifts per day.

None of the day employees in Canada or in the Lake States work nine hours per day, as compared with over two-thirds of the day employees in eastern mills. It will be seen that the hours of labor are, upon the whole, longer in Canada than in the Eastern States, and longer in the Lake States than in Canada.

The data presented show that hourly wages are higher in the case of employees working under the three-shift system than in the case of employees working under the two-shift system, and higher in the case of employees working by the day 9 hours than in the case of employees working by the day 10 hours.

The hourly wages paid are considerably higher in the Eastern States than in the Lake States or in Canada. This is true of each of the groups of occupations selected for tabulation and of all or nearly all of the occupations within the groups.

The difference between wages in the Lake States and wages in Canada is small. In some occupations the Canadian mills, and in others the mills in the Lake States, pay the higher hourly rates. Wages are in general higher in Canada than in the Lake States in the skilled occupations of the industry. Digester cooks, machine tenders, and back tenders are paid higher hourly rates in Canada than in the Lake States. On the other hand, the wages of the men in occupations requiring little skill or training, as, for example, chippers, block handlers, barkermen, and common laborers, are considerably higher in the Lake States than in Canada.

The report from which the above information is extracted contains 132 pages, including valuable charts and tables. It will be found of use to the manufacturer proposing to use Northern Ontario as his industrial field.

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*"Pulp and News Print Paper Industry. Message from the President of the United States transmitting a report by the Tariff Board relative to pulp and news print paper industry." Senate Document No. 31. Copies can be obtained from the Government Printing Office. Washington, D.C.

APPENDIX XI.

The following statistics have been received since the compilation of the foregoing report:—

CANADA'S LUMBER CUT.

The following table shows the total lumber cut of Canada in 1910 by Provinces:–

Province.	Number of Mills Reporting.	Value of Lumber	Percentage of Cut.
Ontario	892	$30,011,009	33·5
British Columbia	222	24,823,441	33·1
Quebec	1,107	11,340,323	16.2
New Brunswick	121	5,560,780	8.6
Nova Scotia	248	3,344,075	5·3
Saskatchewan	21	1,092,571	1.6
Alberta	53	644,717	0.8
Manitoba	54	615,215	0.8
Prince Edward Island	45	71,056	0.1
Canada	2,763	$77,503,187	100.0

AVERAGE PRICE OF LUMBER.

The following table gives the average price of lumber in the several provinces in 1910:—

Province.	Average Price per 1000 feet.
Nova Scotia	$12.66
New Brunswick	13.26
Prince Edward Island	13.48
Quebec	14.22
Alberta	14.28
Manitoba	14·33
Saskatchewan	14·38
British Columbia	15.32
Ontario	18.28
Canada	15.81

SQUARE TIMBER EXPORTED.

The following table gives the quantities of square timber exported during the calendar year 1910:—

Wood.	Quantity Exported in 1910. (Tons.)	Total Value
White pine	21,500	$671,311
Birch	8,390	107,054
Elm	6,095	171,141
Oak	927	22,276
Ash	253	4,287
Maple	20	140
Red pine	3	33
Total	37,962	$985,255

CANADIAN PULP AND PAPER EXPORTS.

The following are details of Canadian exports of pulp and paper during the year ended March 31st, 1911:—

1911	To Great Britain.	To United States.	Total to all Countries.
Pulp, mechanical	$488,709	$3,796,427	$4,407,431
Pulp, chemical	8,219	1,298,162	1,308,101
Paper and manufactures of	840,633	2,051,405	3,924,452
Books, etc	161,619	248,999	461,780
Stationery	2,767	10,909	34,001
	$1,501,947	$7,405,902	$10,135,765

In addition to these exports of manufactured goods, Canada exported in 1911, 936,791 cords of pulpwood, valued at $6,092,715, all going to the United States.

UNITED STATES PAPER EXPORTS.

The following are the United States exports of paper manufactures for the eleven months ended November, 1911:—

Paper.	Value.
Writing and envelopes	$1,021,449
Printing papers	3,310,184
Paper hangings	349,919
Playing cards	249,180
Other papers	4,474,355
	$9,405,087
Wood pulp	349,060
	$9,754,147

UNITED STATES PULP AND PAPER IMPORTS.

The following are the United States imports of pulp and paper manufactures for the eleven months ended November, 1911:—

Books and printed matter, free	$3,130,167
Books and printed matter, dutiable	2,748,303
Total	$ 5,878,470
Wood pulp	12,951,256

VALUE OF FIELD CROPS.

The values of the various field crops of the Dominion in 1911 are estimated as follows:—

Crop.	Value.
Fall wheat	$ 21,461,000
Spring wheat	117,106,000
Oats	126,812,000
Barley	23,004,000
Rye	2,086,000
Peas	4,647,700
Buckwheat	5,232,000
Mixed grains	10,127,000
Flax	19,467,000
Beans	2,219,000
Corn for husking	12,171,900
Potatoes	39,358,000
Turnips, etc	19,541,000
Hay and clover	149,596,000
Fodder corn	12,469,000
Sugar beets	1,165,000
Alfalfa	2,249,000

FIELD CROPS BY PROVINCES.

The provinces contributed the following shares to the total value of field crops of 1911:—

Prince Edward Island	$ 8,846,700
Nova Scotia	14,297,900
New Brunswick	16,797,000
Quebec	103,187,000
Ontario	193,260,000
Manitoba	73,136,000
Saskatchewan	107,147,000
Alberta	47,750,000
British Columbia	1,290,000

ONTARIO'S FIELD CROPS.

The following is the Ontario Government's estimate of the field crops of the province in 1911:—

	Acres. 1911.	Bush. 1911	Per acre. 1911.	30 Yrs. Ave.
Fall wheat	837,492	17,926,586	21.4	21.0
Spring wheat	133,711	2,295,534	17.2	15.9
Barley	616,977	16,248,129	26.3	27.7
Oats	2,699,230	84,829,232	31.4	35.5
Peas	304,491	4,462,182	14.7	19.3
Beans	51,508	898,212	17.4	17.2
Rye	98,652	1,562,971	15.8	16.4
Buckwheat	189,039	3,852,231	20.4	20.3
Corn (husking)	308,350	21,913,290	71.1	*71.3
Corn (silo)	335,935	3,764,227	11.21	*11.45
Potatoes	162,457	13,918,698	86.0	115.0
Carrots	3,207	815,129	254.0	334.0
Mangel-wurzels	64,855	31,578,442	487.0	460.0
Turnips	100,593	39,664,275	394.0	429.0
Mixed grains	486,112	14,845,595	30.5	†33.4
Hay and Clover	3,301,468	‡4,238,362	‡1.28	‡1.46
Sugar beets	26,664	8,941,659	363.0	†4[illegible]2.0

*20 years' average. †5 years' average. ‡Tons.

RAILWAY MILEAGE.

The railway mileage of Canada for 1911 was distributed by provinces as follows:—

Province.	Miles.
Ontario	8,322
Quebec	3,882
Manitoba	3,466
Saskatchewan	3,121
Alberta	[illegible],494
British Columbia	1,892
New Brunswick	1,548
Nova Scotia	1,354
Prince Edward Island	269
Yukon	102

TRADE BY PROVINCES.

The following figures show the value of exports and imports to Canada by provinces during the year ended March 31st, 1911:—

Province.	Total Exports.	Total Imports.
Ontario	$ 93,965,252	$207,201,080
Quebec	123,725,620	141,370,494
Nova Scotia	20,001,324	16,748,580
New Brunswick	28,273,454	11,473,797
Manitoba	3,134,564	34,855,002
British Columbia	23,016,655	38,692,539
Prince Edward Island	436,173	656,678
Alberta	365,265	9,094,726
Saskatchewan	4,056,582	11,024,432
Yukon	221,476	1,076,918
	$297,196,365	$472,194,246